ORDER NO. AD9801005S0
A6

Service Manual

Compact Disc Changer

Compact Disc Changer

SL-PD349
SL-PD665
SL-PD687
SL-PD887

Colour (K) ... Black Type

Areas

P ..... U.S.A.
PP ..... U.S.A. and Canada.
E ..... Europe.
EB ..... Great Britain.
EG ..... Germany and Italy.
GC ..... Asia, Latin America, Middle Near East and Africa.
GN ..... Oceania.

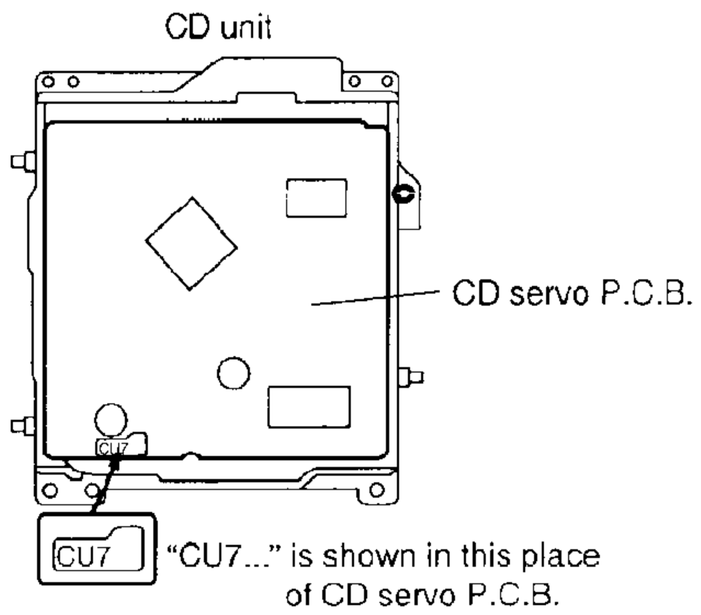
■ Purpose

Please be informed of that the "Traverse Deck (Ass'y)" and "CD Servo P.C.B." of the CD unit have been changed on production.

■ Applicable Serial Number Suffix

Model No.	SL-PD349	SL-PD665	SL-PD687	SL-PD887
Serial No. Suffix	from " K " onward	from " I " onward	from " F " onward	from " F " onward

■ How to distinguish in CD unit



■ Interchangeability

The "NEW" Traverse Deck (Ass'y) (RAE0152Z) and the "FORMER" Traverse Deck (Ass'y) are interchangeable.

Even if the CD unit has the former servo P.C.B., only the traverse deck is changeable to the new one.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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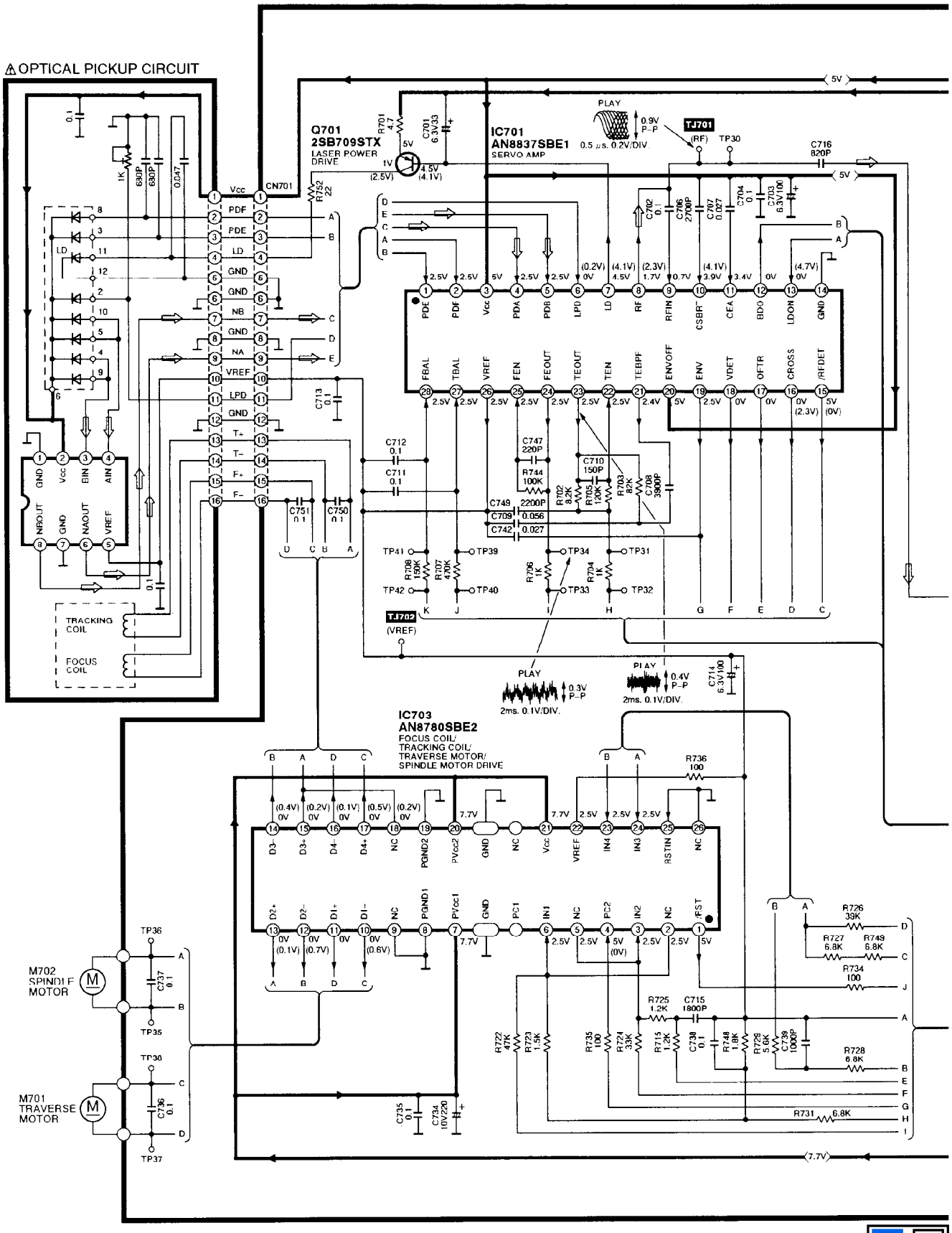
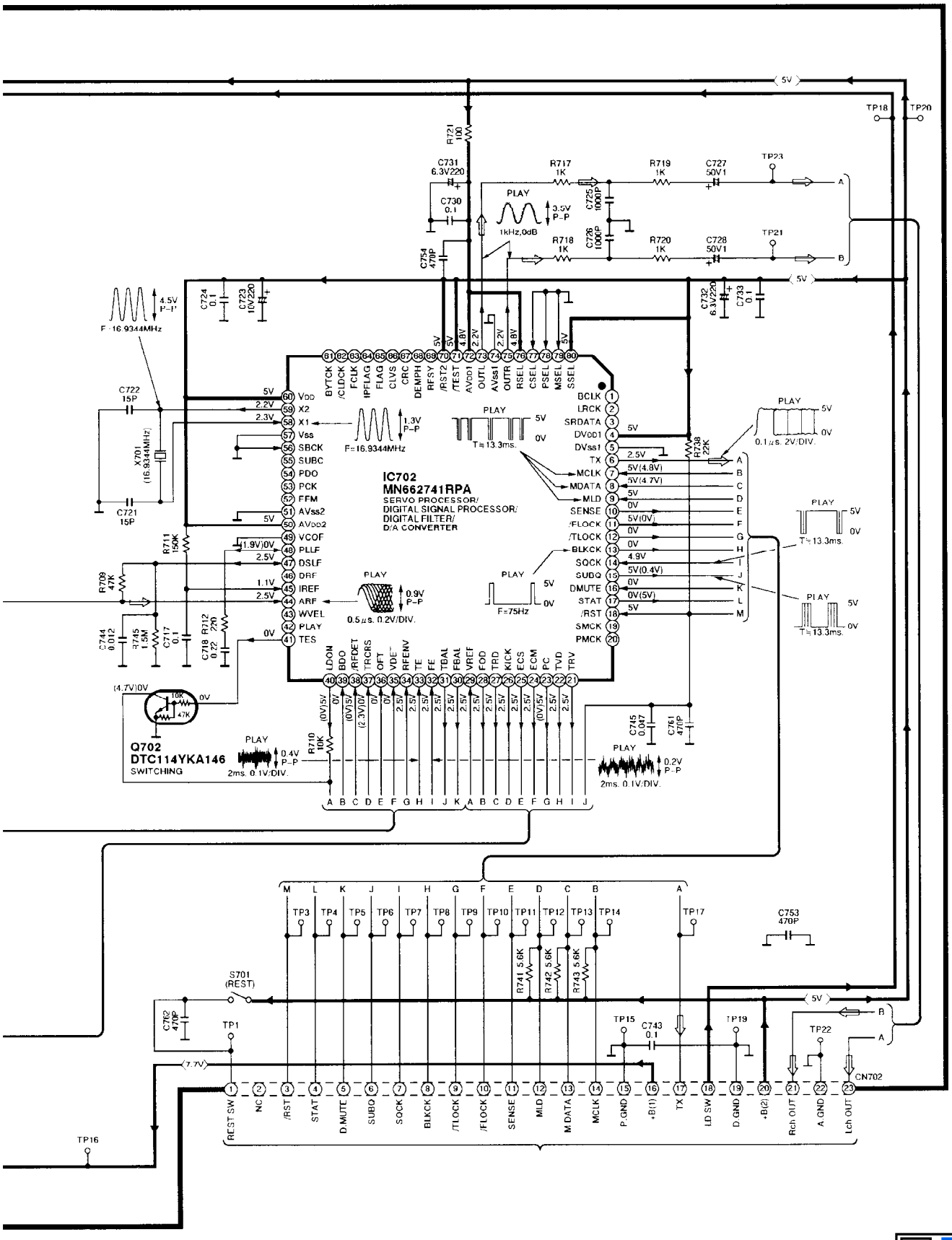
■ Shematic Diagram (New CD Unit)

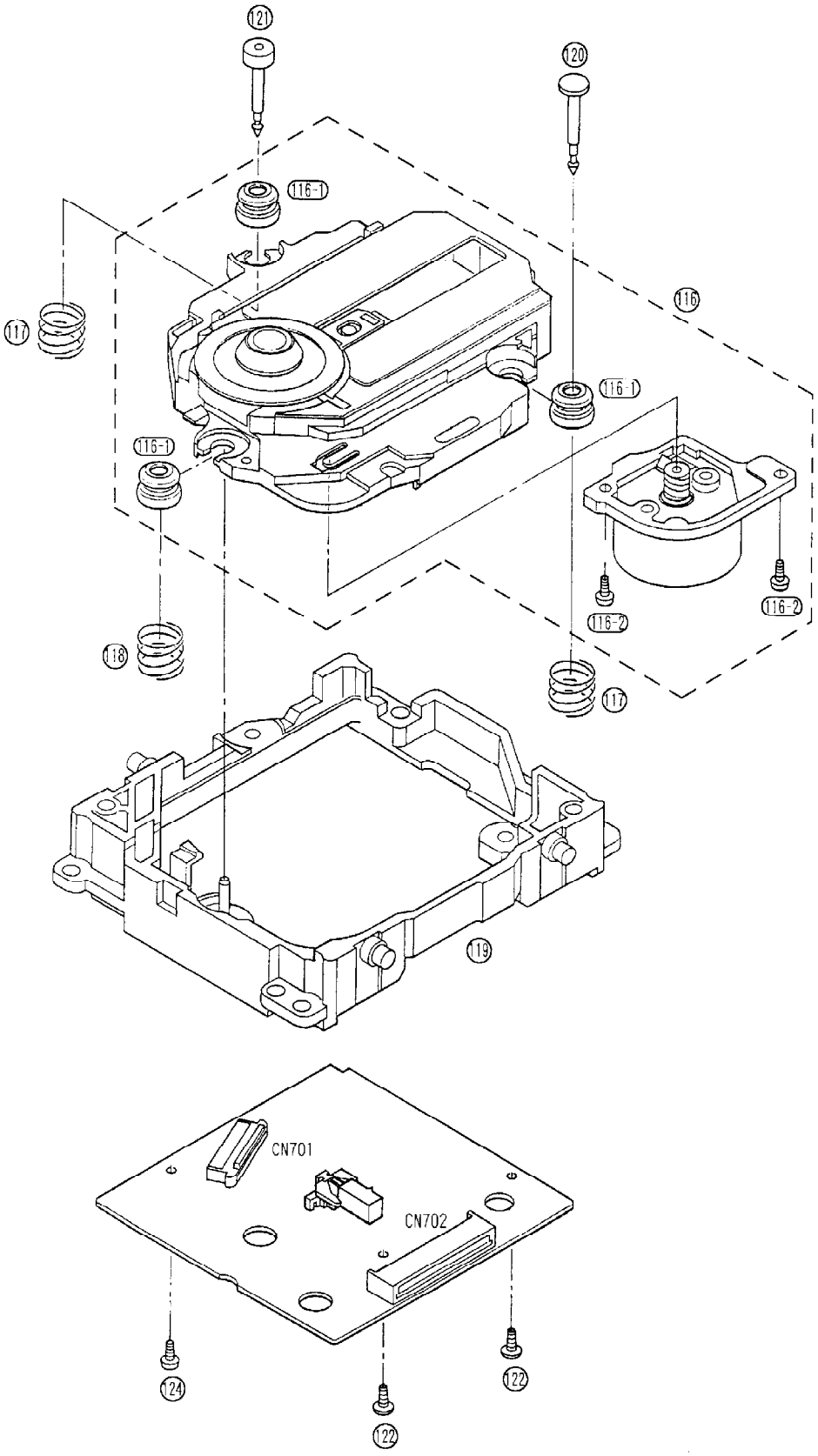
A CD SERVO CIRCUIT



Note: ● ⇨: CD signal line ● ➡: Positive voltage lines



■ CD Unit Parts Location (New CD Unit)



■ Replacement Parts List (New CD Unit)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠116	RAE0152Z	TRAVERSE DECK ASS'Y	1	
116-1	SHGD113-1	FLOATING RUBBER	3	
116-2	SNSD38	SCREW	2	
117	RME0109	FLOATING SPRING(1)	2	
118	RME0142	FLOATING SPRING(2)	1	
119	RMR0698 K	TRAVERSE CHASSIS	1	
120	RMS0627	TRAVERSE FIXED PIN(1)	1	
121	RMS0350-1	TRAVERSE FIXED PIN(2)	1	
122	XTV2+6G	SCREW	2	
124	XTN2+6G	SCREW	1	
C701	ECEA0JKA330I	6.3V 33U	1	
C702	ECUZNE104MBN	25V 0.1U	1	
C703	ECEA0JKA101I	6.3V 100U	1	
C704	ECUZNE104MBN	25V 0.1U	1	
C706	ECUV1H272KBN	50V 2700P	1	
C707	ECUV1E273KBN	25V 0.027U	1	
C708	ECUV1H392KBN	50V 3900P	1	
C709	ECUV1E563KBN	25V 0.056U	1	
C710	ECUV1H151KCN	50V 150P	1	
C711,12	ECUWNE104ZFN	25V 0.1U	2	
C713	ECUZNE104MBN	25V 0.1U	1	
C714	ECEA0JKA101I	6.3V 100U	1	
C715	ECUV1H182KBN	50V 1800P	1	
C716	ECUV1H821KBN	50V 820P	1	
C717	ECUWNE104ZFN	25V 0.1U	1	
C718	ECUVNC224KBN	16V 0.22U	1	
C721,22	ECUV1H150JCN	50V 15P	2	
C723	ECEA1AKA221I	10V 220U	1	
C724	ECUZNE104MBN	25V 0.1U	1	
C725,26	ECUE1H102KBN	50V 1000P	2	
C727,28	ECEA1HPK010I	50V 1U	2	
C730	ECUWNE104ZFN	25V 0.1U	1	
C731,32	ECEA0JKA221I	6.3V 220U	2	
C733	ECUZNE104MBN	25V 0.1U	1	
C734	ECEA1AKA221I	10V 220U	1	
C735-37	ECUWNE104ZFN	25V 0.1U	3	
C738	ECUZNE104MBN	25V 0.1U	1	
C739	ECUV1H103KBN	50V 0.01U	1	
C742	ECUV1E273KBN	25V 0.027U	1	
C743	ECUWNE104ZFN	25V 0.1U	1	
C744	ECUV1E123KBN	25V 0.012U	1	
C745	ECUE1C473KBN	16V 0.047U	1	
C747	ECUV1H221KBN	50V 220P	1	
C749	ECUV1H222KBN	50V 2200P	1	
C750,51	ECUZNE104MBN	25V 0.1U	2	
C753	ECUV1H471KBN	50V 470P	1	
C754	ECUE1H471KBN	50V 470P	1	
C761,62	ECUE1H471KBN	50V 470P	2	
CN701	RJU035T016-1	SOCKET(16P)	1	
CN702	RJS1A6723-1Q	CONNECTOR(23P)	1	
IC701	AN8837SBE1	IC	1	
IC702	MN662741RPA	IC	1	
IC703	AN8780SBE2	IC	1	
Q701	2SB709STX	TRANSISTOR	1	
Q702	DTC114YKA146	TRANSISTOR	1	
R701	ERJ6GFYJ4R7V	1/10W 4.7	1	
R702	ERJ6GEYJ822V	1/10W 8.2K	1	
R703	ERJ6GEYJ823V	1/10W 82K	1	
R704	ERJ6GEYJ102A	1/10W 1K	1	
R705	ERJ6GEYJ124V	1/10W 120K	1	
R706	ERJ6GEYJ102A	1/10W 1K	1	
R707	ERJ6GEYJ474V	1/10W 470K	1	
R708	ERJ6GEYJ154V	1/10W 150K	1	
R709	ERJ6GEYJ473V	1/10W 47K	1	
R710	ERJ6GEYJ103V	1/10W 10K	1	
R711	ERJ6GEYJ154V	1/10W 150K	1	
R712	ERJ6GEYJ221V	1/10W 220	1	
R715	ERJ6GEYJ122V	1/10W 1.2K	1	
R717-20	ERJ6GEYJ102A	1/10W 1K	4	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R721	ERJ6GEYJ101V	1/10W 100	1	
R722	ERJ6GEYJ473V	1/10W 47K	1	
R723	ERJ6GEYJ152V	1/10W 1.5K	1	
R724	ERJ6GEYJ333V	1/10W 33K	1	
R725	ERJ6GEYJ122V	1/10W 1.2K	1	
R726	ERJ6GEYJ393V	1/10W 39K	1	
R727,28	ERJ6GEYJ682V	1/10W 6.8K	2	
R729	ERJ6GEYJ562V	1/10W 5.6K	1	
R731	ERJ6GEYJ682V	1/10W 6.8K	1	
R734-36	ERJ6GEYJ101V	1/10W 100	3	
R738	ERJ6GEYJ223V	1/10W 22K	1	
R741-43	ERJ6GEYJ562V	1/10W 5.6K	3	
R744	ERJ6GEYJ104V	1/10W 100K	1	
R745	ERJ6GEYJ155V	1/10W 1.5M	1	
R748	ERJ6GEYJ152V	1/10W 1.5K	1	
R749	ERJ6GEYJ682V	1/10W 6.8K	1	
R752	ERJ8GEYJ220V	1/8W 22	1	
RJ701	ERJ6GEY0R00A	CHIP JUMPER	1	
RJ702-10	ERJ8GEY0R00A	CHIP JUMPER	9	
RJ721-28	ERJ6GEY0R00A	CHIP JUMPER	8	
RJ750	ERJ6GEY0R00A	CHIP JUMPER	1	
S701	RSH1A043-U	SW	1	
TJ701	EYF8CU	CHIP CLIP	1	
X701	RSXZ16M9M01T	OSCILLATOR	1	

ORDER NO. AD9701002S0
A6

Service Manual

Supplement

MASH multi-stage noise shaping

※ • MASH is a trademark of NTT.

COMPACT disc DIGITAL AUDIO

Compact Disc Changer

SL-PD349
SL-PD687
SL-PD887

• Please file and use this supplement manual together with the service manual for the Model No. (Order No.):

SL-PD349P-K AD9404110A1
SL-PD687E/EB/EG/GC/GN-K AD9502043C8
SL-PD887E/EB/EG-K AD9502066A2
SL-PD887GC/GN-K AD9502067A3

Colour

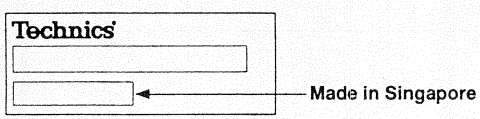
(K) ..... Black Type

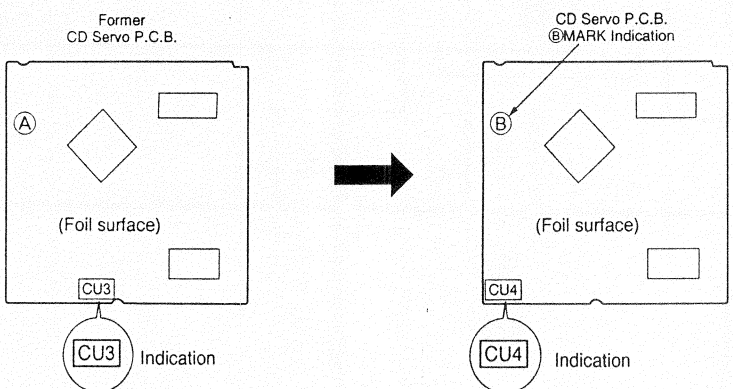
Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(E)	Europe.	
(EB)	Great Britain.	
(EG)	Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania	

■ HOW TO IDENTIFY THE UNITS WITH NEW CD UNITS

- The changes can be identified by their nameplate printed on the rear side of the unit.
- The shape changes between the former and new units are illustrated as shown in Fig. 1 and Fig. 2.





[Fig. 1]

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It

does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.

Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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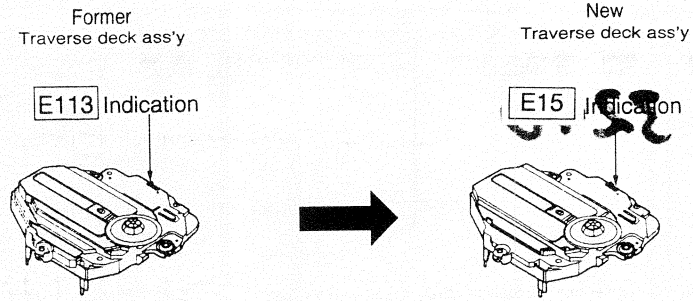


[Fig. 2]

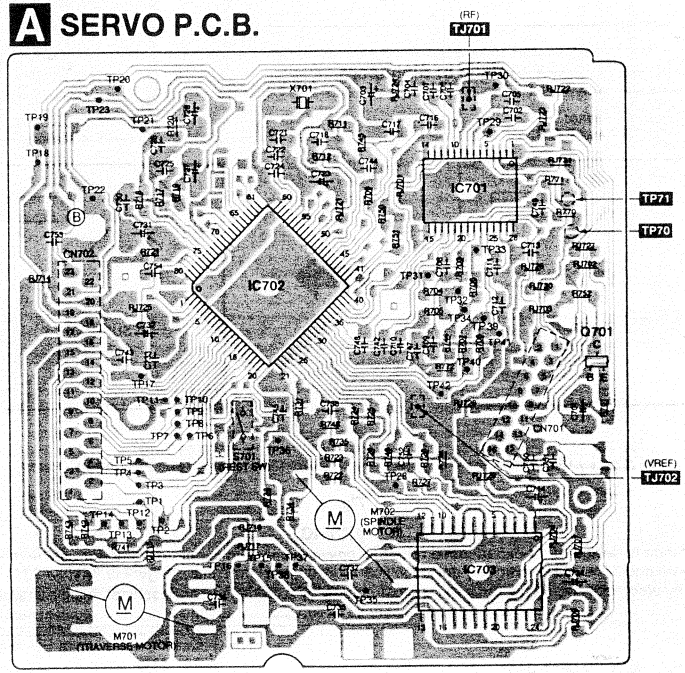
■ NEW/FORMER COMPATIBILITY

In regard Traverse deck ass'y and CD Servo P.C.B., New and Former are not compatible with each other. When repairing, make sure of the New/Former compatibility and use proper parts.

In accordance with the above-stated change, several CD unit parts have been changed.
For the changer parts, refer to page5.

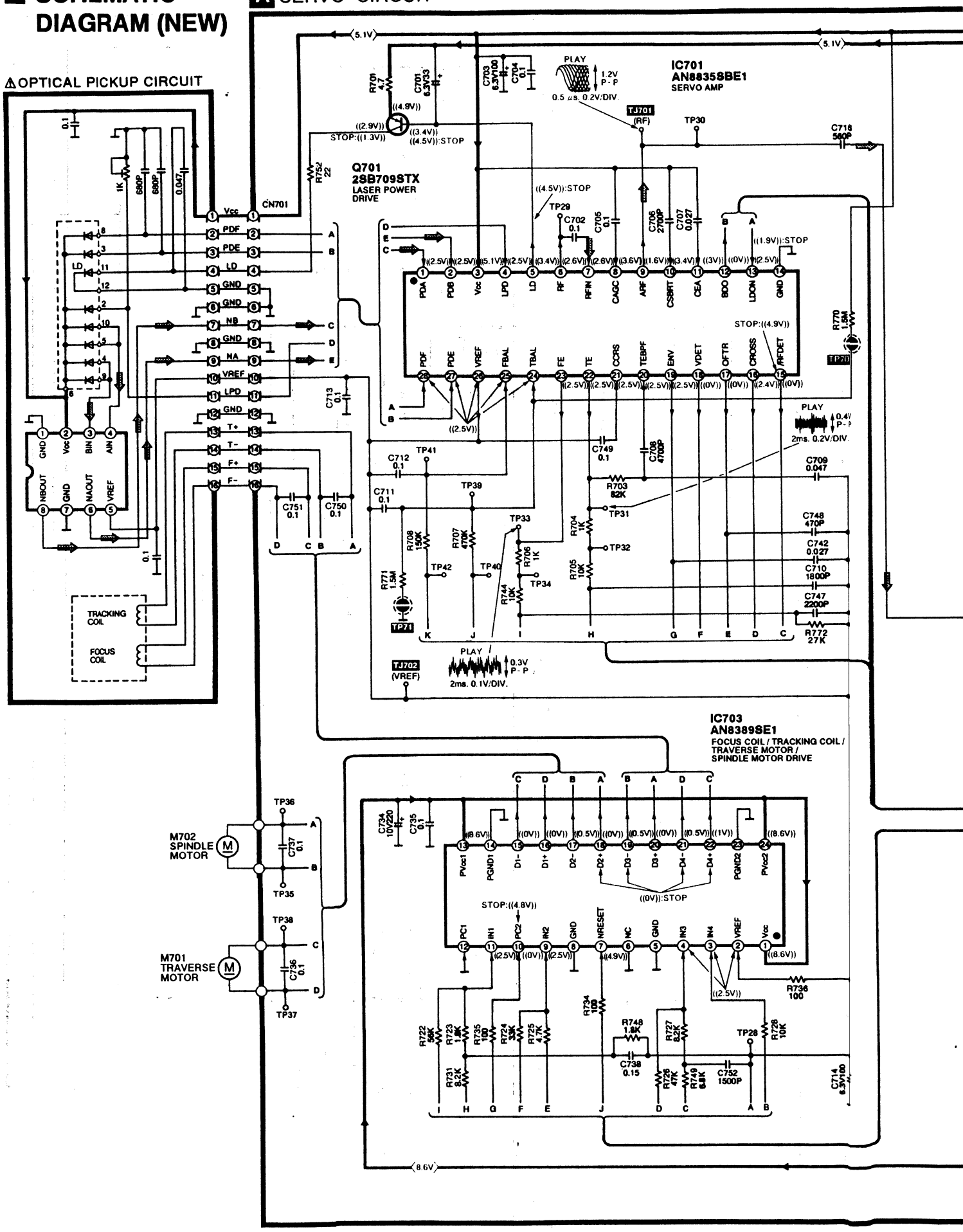
■ PRINTED CIRCUIT BOARD (NEW)

A SERVO P.C.B.

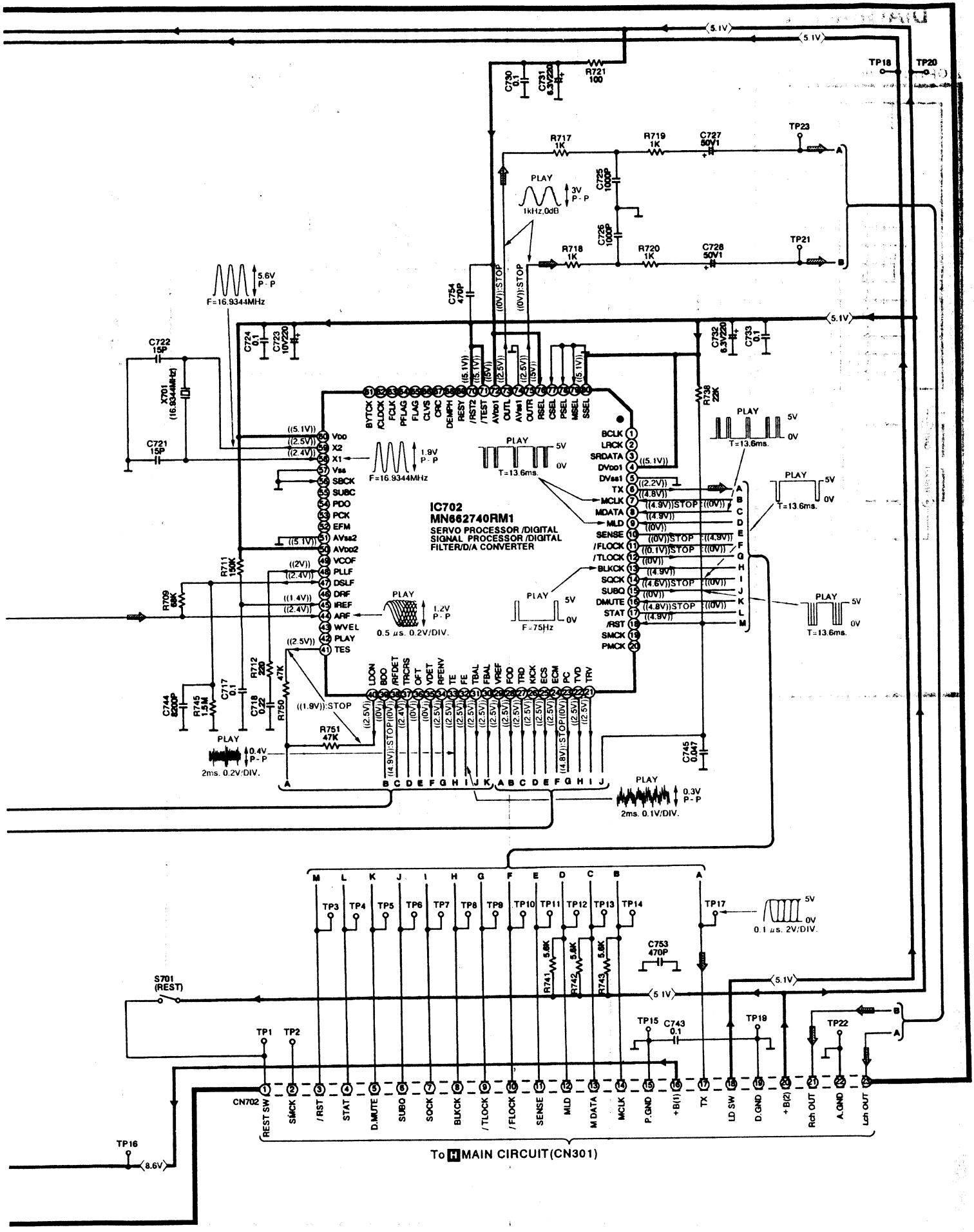


■ SCHEMATIC DIAGRAM (NEW)

A SERVO CIRCUIT



: CD Single Line : + B Line



SL-PD349/PD687/PD887

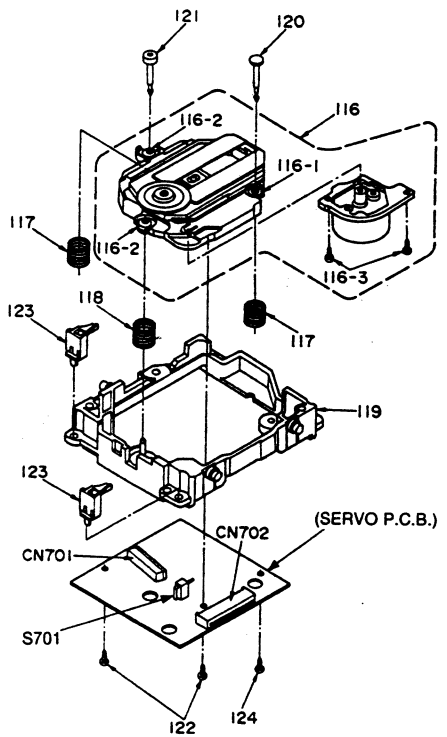
MEMO

■ CD REPLACEMENT PARTS LIST (NEW)

Note 1 in the Remarks column show the changed parts.
Note 1: New and Former are not compatible. Use proper parts as required.

Notes: * Warning: This product uses a laser diode. Refer to caution statements on page 3.
* ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
116	REZ0150Z	TRAVERSE UNIT	[M] Note 1
116-1	SHGD112	FLOATING RUBBER(A)	[M]
116-2	SHGD113-1	FLOATING RUBBER(B)	[M]
116-3	SNSD38	SCREW	[M]
117	RMED109	FLOATING SPRING A	[M]
118	RMED142	FLOATING SPRING B	[M]
119	RMRD698-K	TRAVERSE CHASSIS	[M]
120	RMSD123-1	FIXED PIN A	[M]
121	RMSD350	FIXED PIN B	[M]
122	XTV2+6G	SCREW	[M]
123	RMXD094	TRAY HOLDER	[M]
124	XTN2+6G	SCREW	[M]
		INTEGRATED CIRCUIT(S)	
IC701	AN8835SBE1	I. C. SERVO AMP	[M] Note 1
IC702	MN662740RM1	I. C. SERVO/DIGITAL PROCESSOR	[M] Note 1
IC703	AN8389SE1	I. C. COIL/MOTOR DRIVE	[M]
		TRANSISTOR(S)	
Q701	2SB709S	TRANSISTOR	[M]
		OSCILLATOR(S)	
X701	RSXZ16M9M01T	OSCILLATOR(16. 9344 MHz)	[M]
		SWITCH(ES)	
S701	RSM0006-P	SW, REST	[M]
		CONNECTOR(S)	
CN701	RJU035T016	CONNECTOR(16P)	[M]
CN702	RJS1A6723-1Q	CONNECTOR(23P)	[M]



■ RESISTORS & CAPACITORS (NEW)

Notes: * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)
* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref. No.	Part No.	Values & Remarks
		<SERVO P. C. B.>
		RESISTORS
R701	ERJ6GEYJ4R7V	1/10W 4.7 [M]
R703	ERJ6GEYJ823	1/10W 82K [M]
R704	ERJ6GEYJ102A	1/10W 1K [M]
R705	ERJ6GEYJ103V	1/10W 10K [M]
R706	ERJ6GEYJ102A	1/10W 1K [M]
R707	ERJ6GEYJ474V	1/10W 470K [M]
R708	ERJ6GEYJ154V	1/10W 150K [M]
R709	ERJ6GEYJ683V	1/10W 68K [M]
R711	ERJ6GEYJ154V	1/10W 150K [M]
R712	ERJ6GEYJ221V	1/10W 220 [M]
R717	ERJ6GEYJ102A	1/10W 1K [M]
R718	ERJ6GEYJ102A	1/10W 1K [M]
R719	ERJ6GEYJ102A	1/10W 1K [M]
R720	ERJ6GEYJ102A	1/10W 1K [M]
R721	ERJ6GEYJ101V	1/10W 100 [M]
R722	ERJ6GEYJ563V	1/10W 56K [M]
R723	ERJ6GEYJ182V	1/10W 1.8K [M]
R724	ERJ6GEYJ333V	1/10W 33K [M]
R725	ERJ6GEYJ472V	1/10W 4.7K [M]
R726	ERJ6GEYJ473V	1/10W 47K [M]
R727	ERJ6GEYJ822V	1/10W 8.2K [M]
R728	ERJ6GEYJ103V	1/10W 10K [M]
R731	ERJ6GEYJ822V	1/10W 8.2K [M]
R734	ERJ6GEYJ101V	1/10W 100 [M]
R735	ERJ6GEYJ101V	1/10W 100 [M]
R736	ERJ6GEYJ101V	1/10W 100 [M]
R738	ERJ6GEYJ223V	1/10W 22K [M]
R741	ERJ6GEYJ562V	1/10W 5.6K [M]
R742	ERJ6GEYJ562V	1/10W 5.6K [M]
R743	ERJ6GEYJ562V	1/10W 5.6K [M]
R744	ERJ6GEYJ103V	1/10W 10K [M]
R745	ERJ6GEYJ155V	1/10W 1.5M [M]
R748	ERJ6GEYJ182V	1/10W 1.8K [M]
R749	ERJ6GEYJ682V	1/10W 6.8K [M]
R750	ERJ6GEYJ473V	1/10W 47K [M]
R751	ERJ6GEYJ473V	1/10W 47K [M]
R752	ERJ8GEYJ220V	1/8W 22 [M]
R770	ERJ6GEYJ155V	1/10W 1.5M [M]
R771	ERJ6GEYJ155V	1/10W 1.5M [M]
R772	ERJ6GEYJ273V	1/10W 27K [M]
		CAPACITORS
C701	ECEA0JKA330I	6.3V 33U [M]
C702	ECUZNE104MBN	25V 0.1U [M]
C703	ECEA0JKA101I	6.3V 100U [M]

Ref. No.	Part No.	Values & Remarks
C704	ECUZNE104MBN	25V 0.1U [M]
C705	ECUZNE104MBN	25V 0.1U [M]
C706	ECUV1H272KBN	50V 2700P [M]
C707	ECUV1E273KBN	25V 0.027U [M]
C708	ECUE1H472KBN	50V 4700P [M]
C709	ECUE1C473KBN	16V 0.047U [M]
C710	ECUV1H182KBN	50V 1800P [M]
C711	ECUWNE104ZFN	25V 0.1U [M]
C712	ECUWNE104ZFN	25V 0.1U [M]
C713	ECUV1C104MBM	16V 0.1U [M]
C714	ECEA0JKA101I	6.3V 100U [M]
C716	ECUE1H561KBN	50V 560P [M]
C717	ECUWNE104ZFN	25V 0.1U [M]
C718	ECUVNC224KBN	16V 0.22U [M]
C721	ECUV1H150JCN	50V 15P [M]
C722	ECUV1H150JCN	50V 15P [M]
C723	ECEA1AKA221I	10V 220U [M]
C724	ECUV1C104MBM	16V 0.1U [M]
C725	ECUE1H102KBN	50V 1000P [M]
C726	ECUE1H102KBN	50V 1000P [M]
C727	ECEA1HPK010I	50V 1U [M]
C728	ECEA1HPK010I	50V 1U [M]
C730	ECUWNE104ZFN	25V 0.1U [M]
C731	ECEA0JKA221I	6.3V 220U [M]
C732	ECEA0JKA221I	6.3V 220U [M]
C733	ECUZNE104MBN	25V 0.1U [M]
C734	ECEA1AKA221I	10V 220U [M]
C735	ECUWNE104ZFN	25V 0.1U [M]
C736	ECUWNE104ZFN	25V 0.1U [M]
C737	ECUWNE104ZFN	25V 0.1U [M]
C738	ECUV1C154KBN	16V 0.15U [M]
C742	ECUV1E273KBN	25V 0.027U [M]
C743	ECUWNE104ZFN	25V 0.1U [M]
C744	ECUE1E822KBN	25V 8200P [M]
C745	ECUE1C473KBN	16V 0.047U [M]
C747	ECUE1H222KBN	50V 2200P [M]
C748	ECUV1H471KBM	50V 470P [M]
C749	ECUZNE104MBN	25V 0.1U [M]
C750	ECUV1C104MBM	16V 0.1U [M]
C751	ECUZNE104MBN	25V 0.1U [M]
C752	ECUE1H152KBN	50V 1500P [M]
C753	ECUV1H471KBM	50V 470P [M]
C754	ECUE1H471KBN	50V 470P [M]
		CHIP JUMPER(S)
RJ701	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ702	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ703	ERJ8GEY0R00A	CHIP JUMPER [M]

Ref. No.	Part No.	Values & Remarks
RJ704	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ707	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ709	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ714	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ715	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ716	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ717	ERJ8GEY0R00A	CHIP JUMPER [M]
RJ721	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ722	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ723	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ724	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ725	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ726	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ727	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ728	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ729	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ730	ERJ6GEY0R00A	CHIP JUMPER [M]
RJ731	ERJ6GEY0R00A	CHIP JUMPER [M]
		TEST JUMPERS
TJ701	EYF8CU	TEST JUMPERS [M]
TJ702	EYF8CU	TEST JUMPERS [M]

Printed in Japan
H970111300 SS/HH

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length: 780nm
Maximum output radiation power from pickup: 100μW/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG: Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

Wellenlänge: 780nm
Maximale Strahlungsleistung der Lasereinheit: 100μW/VDE

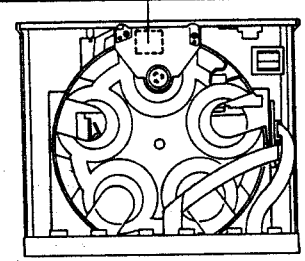
Die Strahlung an der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

ADVARSEL: **I dette a apparat anvendes laser.**

• Use of caution label

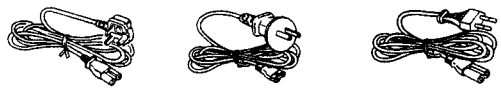
DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD BETRAKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN. RQLS0104



CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ ACCESSORIES

AC power supply cord ..... 1 pc.
[VJA0733 (EB)] [RJA0036-K (GN)] [RJA0019-2K (E, EG, GC)]



Stereo connection cable ..... 1 pc.
[SJP2249-3]

Power plug adaptor ..... 1 pc.
[SJP5213-2 (GC)]

■ CONNECTIONS

Before connecting the changer to your audio system, make sure that the power of the changer and all other system components is turned off.

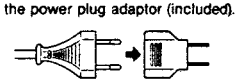
- Although the figure below shows the AC power supply cord being connected to a household AC outlet, if the amplifier (or receiver) is equipped with an AC outlet, connect the cord to that outlet.
- The configuration of the AC outlet differs according to area.

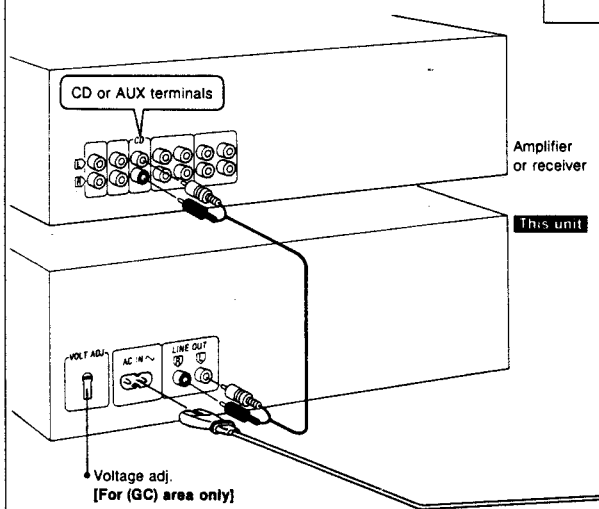
Stereo connection cable
White (L)
Red (R)

[For (EB) area only]
BE SURE TO READ THE CAUTION FOR AC POWER SUPPLY CORD ON PAGE 4 BEFORE THE FOLLOWING CONNECTIONS.

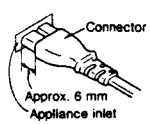
[For (GC) area only]
Set the voltage selector to the voltage setting for the area in which the unit will be used.
[Use a minus (−) screwdriver]
Note
If the power supply in your area is 117 V or 120 V, set to the "127 V" position.
Note that this unit will be seriously damaged if this setting is not made correctly.

If the power plug will not fit your socket, use the power plug adaptor (included).



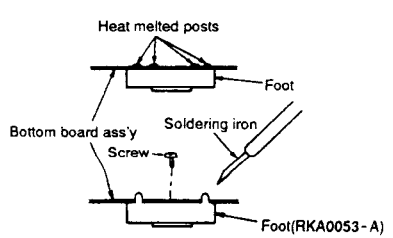


[For (E, EB, EG, GC) areas]
Insertion of Connector
Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.



■ REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0053-A) on the Bottom board ass'y melt the 4 posts with a soldering iron or install it with a screw (XTB3+6J).



■ CAUTION FOR AC MAINS LEAD

For (EB) area.

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ⓑ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

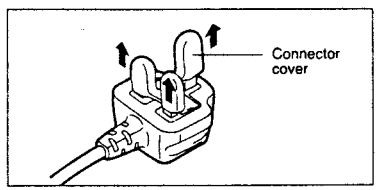
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

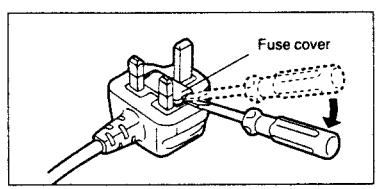
Before use

Remove the connector cover as follows.

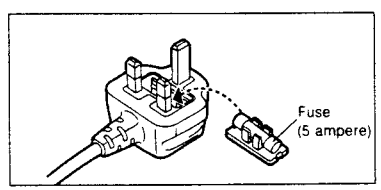


How to replace the fuse

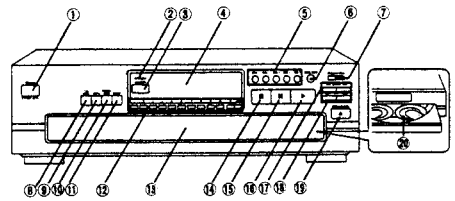
1. Remove the fuse cover with a screwdriver.



2. Replace the fuse and attach the fuse cover.

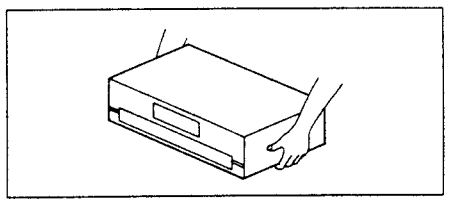


■ FRONT PANEL CONTROLS



No.	Name
①	**Power "STANDBY ⏻ /ON" switch (POWER, STANDBY ⏻ /ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
②	**"STANDBY" indicator (STANDBY)** When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
③	**Remote control signal sensor (SENSOR)** The word "SENSOR" does not appear on the panel, but if you have an amplifier (or receiver) with remote control transmitter which is manufactured by Technics, it is possible to operate the main unit using this remote control transmitter. (Some remote control transmitters cannot be used.)
④	**Display**
⑤	**Disc buttons (DISC 1 – 5)**
⑥	**Disc skip button (DISC SKIP)**
⑦	**Program mode button (PROGRAM MODE)**
⑧	**Time mode button (TIME MODE)**
⑨	**Spiral button (SPIRAL)**
⑩	**Random mode button (RANDOM MODE)**
⑪	**Repeat button (REPEAT)**
⑫	**Numeric buttons (1 – 10, 0, >10)**
⑬	**Loading drawer**
⑭	**Stop button (■)**
⑮	**Pause button (II)**
⑯	**Play button (▶)**
⑰	**Search buttons (◀◀ SEARCH ▶▶)**
⑱	**Skip buttons (⏮ SKIP ⏭)**
⑲	**Loading drawer open/close button (▲ OPEN/CLOSE)**
⑳	**Disc trays (1 – 5)**

■ CAUTIONS CONCERNING THE MOVING OF THIS UNIT



CAUTION

Before moving the changer to another location, be sure to carry out the "Preparations for moving the unit" described below.

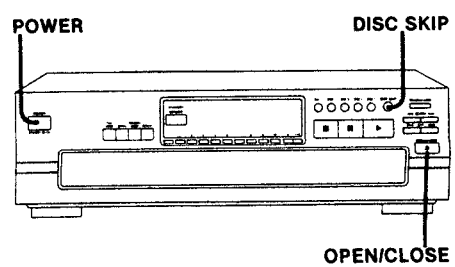
Failure to do so will expose the compact discs and the changer to the risk of severe damage.

Preparations for moving the unit

All of the discs must be removed so that the trays are completely empty.
Use the following procedure.

① Press POWER to switch off the unit.
② Press POWER to switch on the unit.
(If there is a disc in the play section, it will be returned to the disc tray at this time.)
③ Press OPEN/CLOSE to open the loading drawer.
④ Press DISC SKIP to rotate the disc trays and remove the discs from all disc trays.
⑤ Press OPEN/CLOSE to close the loading drawer.
⑥ Press POWER to switch off the unit.

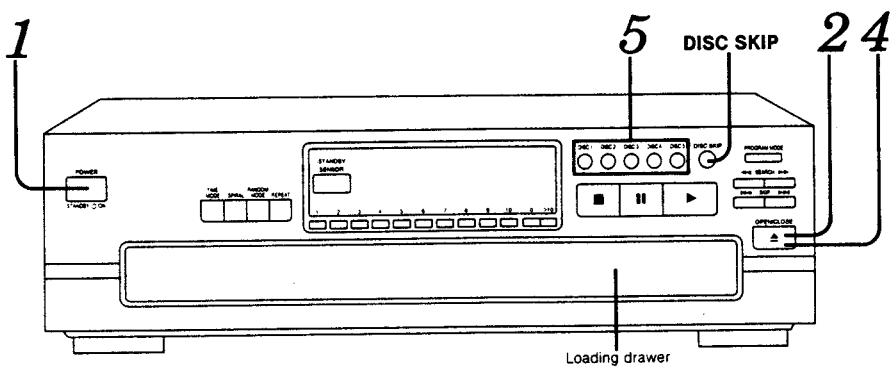
If you have pressed a wrong button by mistake, return to step ①.



■ BASIC OPERATIONS

Sequential play

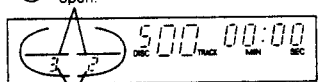
All of the discs will be played, beginning from track 1 on the selected disc.



The explanation below is an example of operation in the case where all five disc trays in the changer are holding CDs.

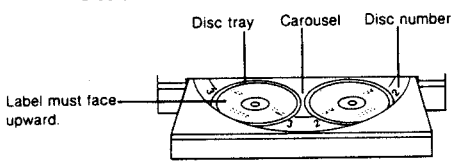
1 POWER **Press POWER.**
The unit will switch on.

2 OPEN/CLOSE **Press OPEN/CLOSE to open the loading drawer.**
Indicates that the loading drawer is open.



Numbers of the trays in which discs are loaded.

3 **Load the disc(s) on the disc tray(s).**
The discs can be loaded two at a time by pressing DISC SKIP to rotate the carousel.



Note
Do not load 3″ (8 cm) and 5″ (12 cm) discs on the same disc tray.

CAUTION
Do not touch the loading drawer and carousel while they are in motion, and do not attempt to rotate the carousel by hand; doing so could result in incorrect operation of the unit and/or damage to the discs.

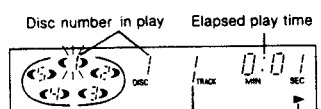
4 OPEN/CLOSE **Press OPEN/CLOSE again to close the loading drawer.**

Note
Do not attempt to close the drawer by hand.

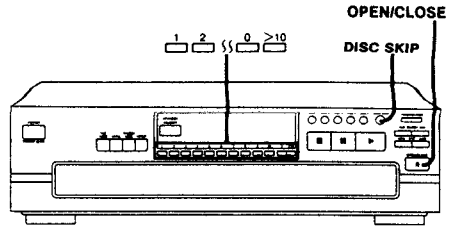
Current play position (The numeral illuminates with a red color.)

Illuminates when a disc is in the disc tray. If there is no disc in the disc tray, the indication disappears when the disc tray comes to the play position.

5 **Press the desired disc button (1 – 5).**
Play will begin from the selected disc. If a disc is not on the selected disc tray, the changer plays the disc at the next number.



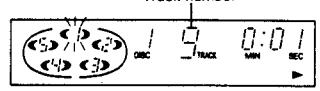
The changer plays all the tracks on all the discs in order and stops automatically when the last track on the last disc finishes playing. The first disc will then be at the playing position.



To directly access a desired track

Press the numeric button(s) to select the track.

Track number



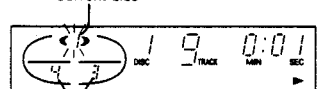
To select a track between 1 and 10:
Press the corresponding number on the numeric button.
To select a two-digit track number over 10:
First press >10, and then press the numbers for the two digits.
For example; number 20:
Press >10, then 2, and then 0.

To exchange discs during play

While playing a disc, it is possible to change the other discs without interrupting play.

① **Press OPEN/CLOSE to open the loading drawer.**

Current disc

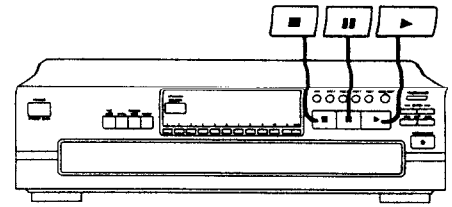


Discs which can be changed.

② **Press DISC SKIP to rotate the disc trays and exchange the discs.**
The carousel will move by one disc tray. Pressing again moves the carousel in the opposite direction by two disc trays.

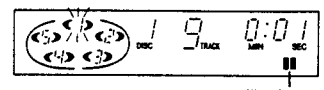
③ **Press OPEN/CLOSE to close the loading drawer.**

Note
If you play a disc with the loading drawer open, discs other than the current disc cannot be played.



To temporarily stop play

Press ❚❚.



Illuminates

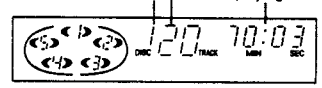
To resume play

Press ▶.

To stop play

Press ■.
The display will show the total number of tracks and the total playing time of the current disc.

Total number of tracks
Current disc
Total playing time



The total playing time displayed includes the silent sections between tracks. For this reason, it may be a few seconds longer than the playing time indicated on the disc.

To resume play

Press ▶.

CAUTION
Do not move this changer with a compact disc inside the unit. If a disc comes off the disc tray, it might be scratched or the changer might become incapable of playing.
(Refer to "Cautions concerning the moving of this unit" on page 5.)

■ SELF-DIAGNOSTIC DISPLAY FUNCTION

Self-diagnostic display

This unit is equipped with a self-diagnostic display function which, if a problem occurs, will display an error code corresponding to the problem.
Use this function when performing maintenance on the unit.

Display procedure	Display location

Entering the Self-Diagnostic Mode

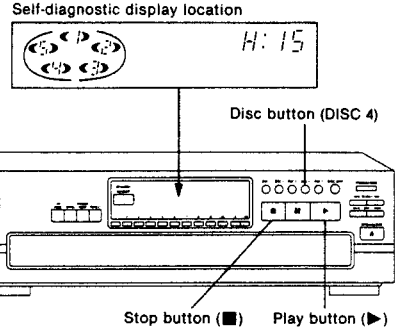
1. With no CD loaded in the tray, turn on the unit.
2. Unplug the power cord of the unit, and then plug it back in while pressing the STOP (■), PLAY (▶) and DISC 4 buttons together. This will bring up the FL display.
3. Release the above three buttons.

To Display Self-Diagnostic Results

1. When the FL display lights up, the unit automatically repeats an approximately 50-second cycle of the following operations.

※ → Tray opens. → (Ⓐ) Tray closes. → (Ⓑ) Traverse deck lifts. → Tray opens. → Tray closes. → (Ⓑ) Traverse deck lowers. → Rotary tray turns counter-clockwise two disc slots. → (Ⓒ) Traverse deck lifts once, and then lowers. → Rotary tray turns clockwise one disc slot. → (Ⓒ) Traverse deck lifts once, and then lowers. → Traverse deck lifts once, and then lowers. → (Ⓒ) Rotary tray turns counterclockwise one disc slot. → Rotary tray turns clockwise three disc slots. → (Ⓒ) Traverse deck lifts once, and then lowers. → Rotary tray turns counterclockwise two disc slots. → ※

Self-diagnostic display location



2. Self-diagnostic fault results appear on the FL display for approximately one second as "H15" at location Ⓐ, "H16" at Ⓑ and "F18" at Ⓒ, during the above cycle.
3. If there are no faults as a result of self-diagnostic, "TRACK 00:00" appears on the FL display.

To Return to Normal Display

• Press the power button to turn off the unit, and then turn it on again.

To Display Self-Diagnostic Results Again

• Follow steps 1 through 3 of "Entering Self-Diagnostic Mode" above.

To Clear the Display of Self-Diagnostic Results

• Turn off the unit to clear the contents of the stored fault results.

Interpretation of error codes

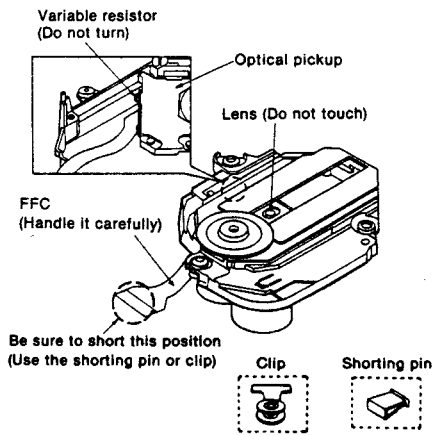
Error code	Problem condition	Correction procedure
H15	CD tray does not open or close when CD tray open/close (▲) button is pressed.	Faulty loading motor and motor drive IC (IC501), or faulty contact or short-circuit on open/close detect switch, S551. (Check and replace)
H16	When the CD tray open/close (▲) button is pressed, the CD tray closes momentarily but then opens again, or opens momentarily and then closes again.	
F18	Faulty rotary turret rotation detection. Example: The turret continues to turn at the initial position without stopping.	Check the optical sensor (D501) and replace if necessary.

■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FFC).
   When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FFC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

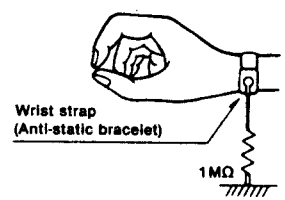


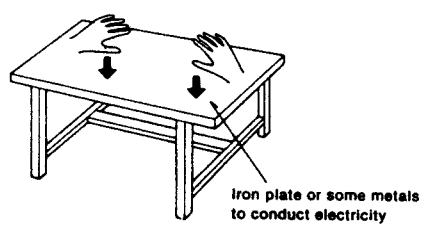
• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table gounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).





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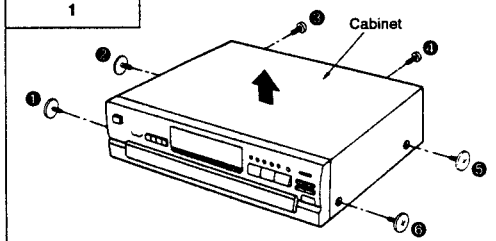
■ DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.
Warning: This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG: • Die lasereinheit nicht zerlegen.
• Die lasereinheit dart nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

Ref.No. 1 — Removal of the cabinet

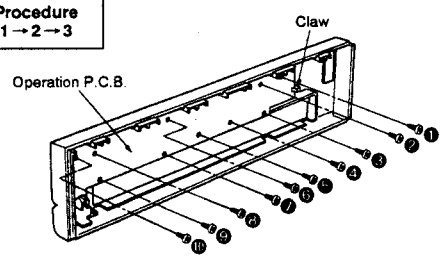
Procedure 1



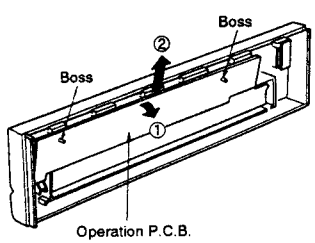
1. Remove the 6 screws(❶~❻).
2. Remove the cabinet in the direction of arrow.

Ref.No. 3 — Removal of the operation P.C.B.

Procedure 1→2→3



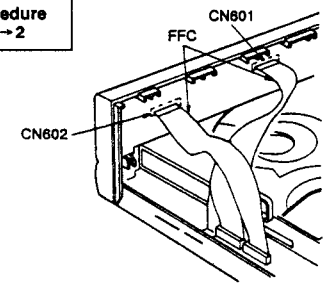
1. Remove the 10 screws(❶~⓾).
2. Release the 1 claw.



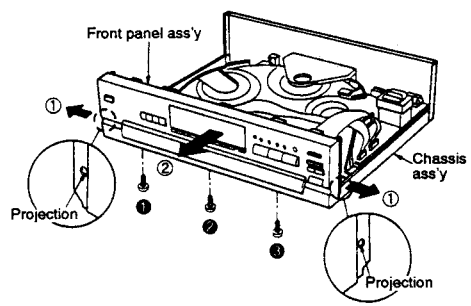
3. Tilt the operation P.C.B. in the direction of arrow① and release the bosses. Then, remove the operation P.C.B. in the direction of arrow②.

Ref.No. 2 — Removal of the front panel ass'y

Procedure 1→2



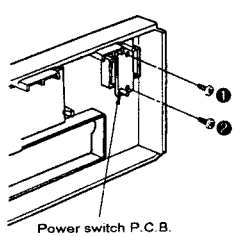
1. Pull out the FFC from connectors(CN601, CN602).



2. Remove the 3 screws(❶~❸).
3. Pull the front panel ass'y in both direction of arrow① to unlock it from the projections of the chassis ass'y.
4. Remove the front panel ass'y in the direction of arrow②.

Ref.No. 4 — Removal of the power switch P.C.B.

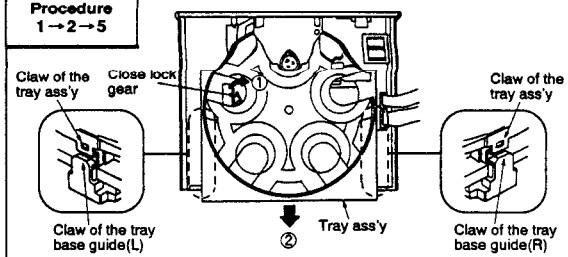
Procedure 1→2→4



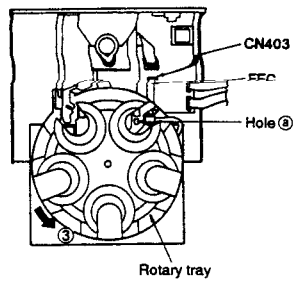
• Remove the 2 screws(❶, ❷).

Ref.No. 5 — Removal of the tray ass'y

Procedure 1→2→5


Claw of the tray ass'y
Close lock gear
Claw of the tray ass'y
Claw of the tray base guide(L)
Tray ass'y
Claw of the tray base guide(R)

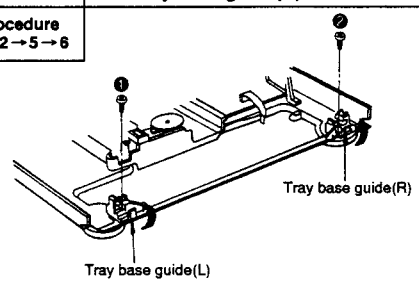
1. Keep the close lock gear pressed in the direction of arrow①, and move the tray ass'y in the direction of arrow②.
2. Fit the claw of the tray ass'y in the claw of the tray base guide(L).
3. Fit the claw of the tray ass'y in the claw of the tray base guide(R).



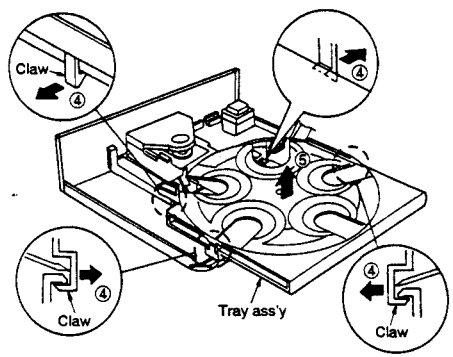
4. Pull out the FFC from connector(CN403).
5. Rotate the rotary tray to the position that can be confirmed the hole ⓐ in the direction of arrow③.

Ref.No. 6 — Removal of the tray base guide(L) and tray base guide(R)

Procedure 1→2→5→6



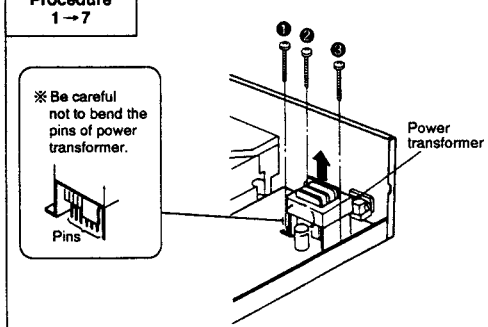
1. Remove the 2 screws(❶, ❷).
2. Remove the tray base guide(L) and tray base guide(R) in the direction of arrow.



5. Push and release the 4 claws in the direction of arrow④, and then remove the tray ass'y in the direction of arrow⑤.

Ref.No. 7 — Removal of the power transformer

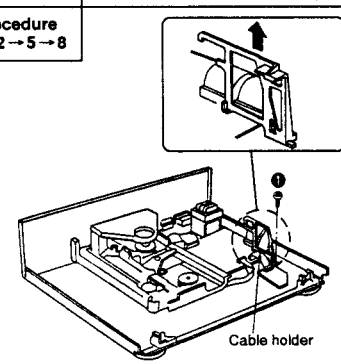
Procedure 1→7



1. Remove the 3 screws(❶~❸).
2. Remove the power transformer in the direction of arrow.

Ref.No. 8 — Removal of the cable holder

Procedure 1→2→5→8



1. Remove the 1 screw(❶).
2. Lift the cable holder in the direction of arrow.

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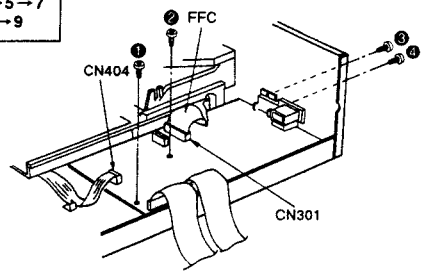
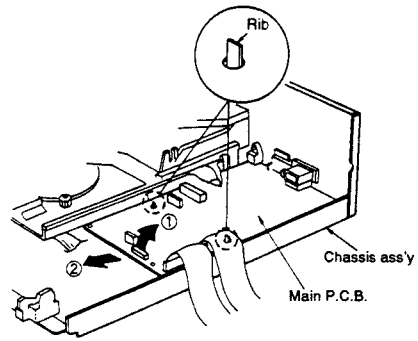
Ref.No. 9 — **Removal of the main P.C.B. and D/A CONV. P.C.B.**

Procedure 1→2→5→7→8→9

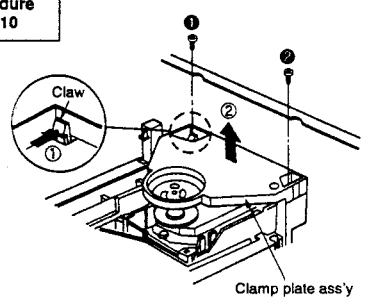




1. Pull out the FFC from connector(CN301).
2. Remove 1 connector(CN404).
3. Remove the 4 screws(❶~❹).
4. Lift up the main P.C.B. in the direction of arrow①, and release the 2 ribs on the chassis ass'y. Then , remove the main P.C.B. in the direction of arrow②.

Ref.No. 10 — **Removal of the clamp plate ass'y**

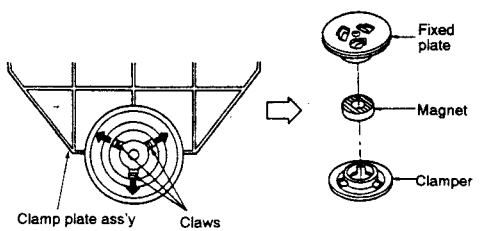
Procedure 1→10



1. Remove the 2 screws(❶, ❷).
2. Push the claw in the direction of arrow①, and then remove the clamp plate ass'y in the direction of arrow②.

Ref.No. 11 — **Removal of the fixed plate, magnet and clamper**

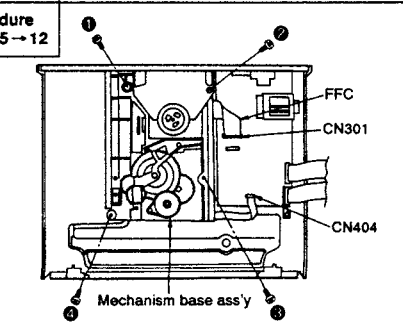
Procedure 1→10→11



• Release the 3 claws in the direction of arrow.

Ref.No. 12 — **Removal of the mechanism base ass'y**

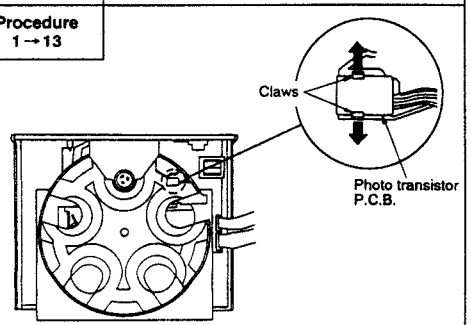
Procedure 1→2→5→12



1. Pull out the FFC from connector(CN301).
2. Remove 1 connector(CN404).
3. Remove the 4 screws(❶~❹).

Ref.No. 13 — **Removal of the photo transistor P.C.B.**

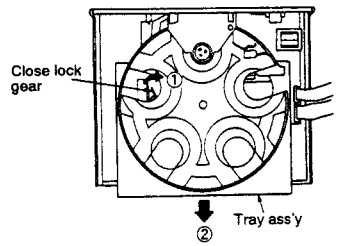
Procedure 1→13

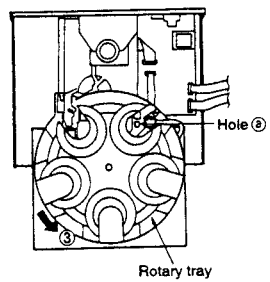


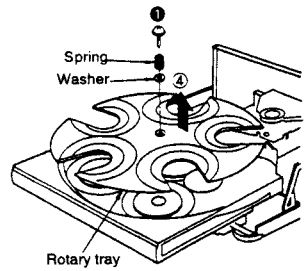
• Release the 2 claws in the direction of arrow.

Ref.No. 14 — **Removal of the rotary tray**

Procedure 1→2→14



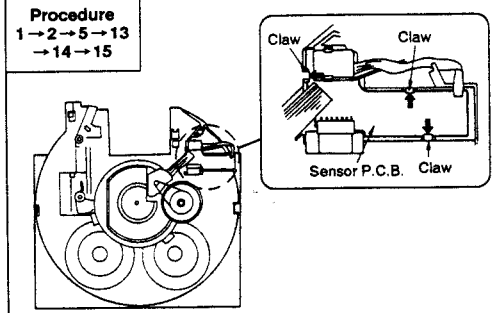




1. Keep the close lock gear pressed in the direction of arrow①, and move the tray ass'y in the direction of arrow②.
2. Rotate the rotary tray to the position that can be confirmed the hole ⓑ in the direction of arrow③.
3. Remove the 1 screw(❶).
4. Remove the spring and washer.
5. Remove the rotary tray in the direction of arrow④.

Ref.No. 15 — **Removal of the sensor P.C.B.**

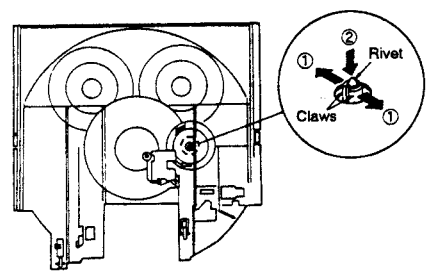
Procedure 1→2→5→13→14→15



• Release the 3 claws in the direction of arrow, and remove the sensor P.C.B.

Ref.No. 16 — **Removal of reduction gear**

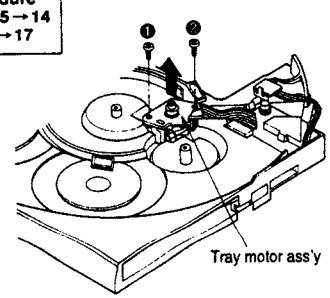
Procedure 1→2→5→14→16



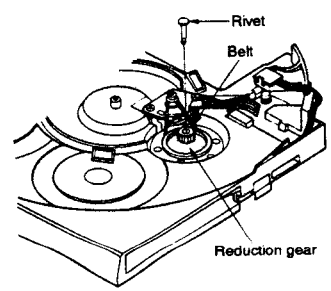
1. Release the 2 claws in the direction of arrow①, and then push the rivet in the direction of arrow②.

Ref.No. 17 — **Removal of motor holder and tray motor ass'y**

Procedure 1→2→5→14→16→17



1. Remove the 2 screws(❶, ❷).
2. Remove the motor holder and tray motor ass'y in the direction of arrow.



2. Pull out the rivet.
3. Remove the belt.
3. Remove the reduction gear.

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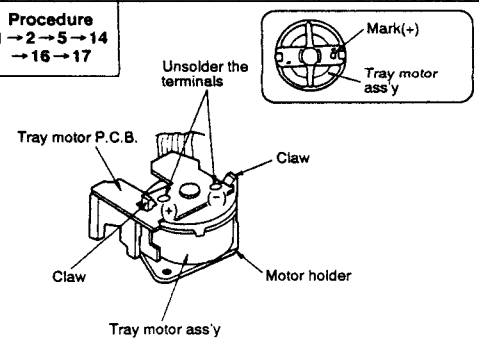
Ref.No. 18 — Removal of the tray motor P.C.B.

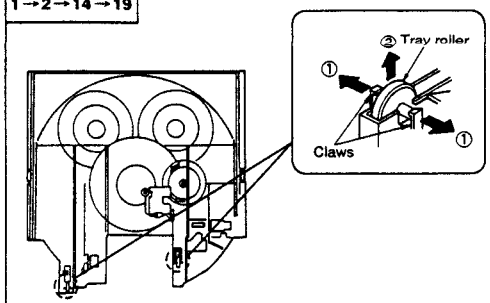
Procedure 1→2→5→14→16→17



1. Release the 2 claw, and then remove the motor holder.
2. Unsolder the terminals of the tray motor ass'y.

Ref.No. 19 — Removal of the tray roller

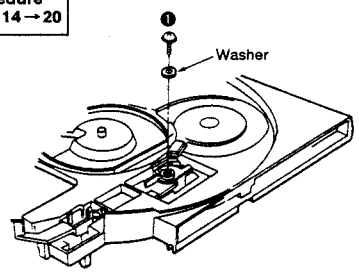
Procedure 1→2→14→19



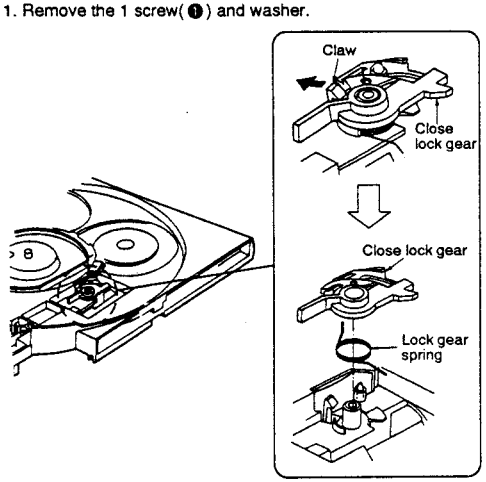
• Release the 2 claws in the direction of arrow①, and then remove the tray roller in the direction of arrow②.

Ref.No. 20 — Removal of the close lock gear

Procedure 1→2→14→20



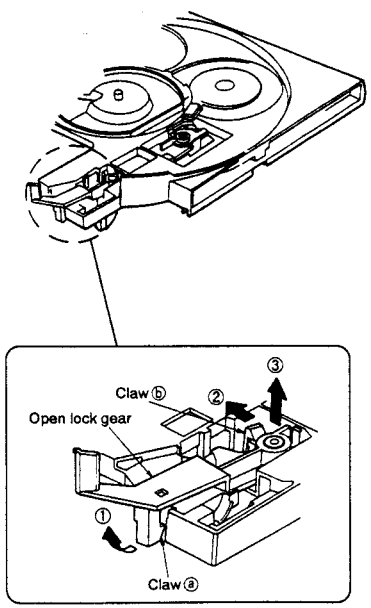
1. Remove the 1 screw(❶) and washer.



2. Release the 1 claw and then remove the close lock gear and lock gear spring.

Ref.No. 21 — Removal of the open lock gear

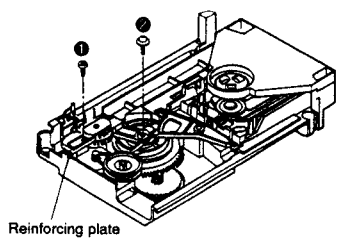
Procedure 1→2→5→14→21



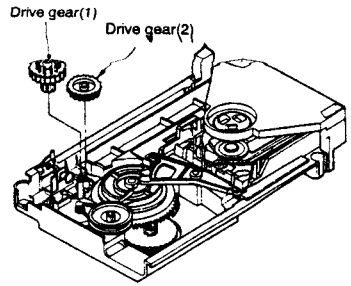
1. Release the claw ⓐ of open lock gear in the direction of arrow①.
2. Release the claw ⓑ of open lock gear in the direction of arrow②, and then remove the of open lock gear in the direction of arrow③.

Ref.No. 22 — Removal of the reinforcing plate, drive gear(1) and drive gear(2)

Procedure 1→2→5→22



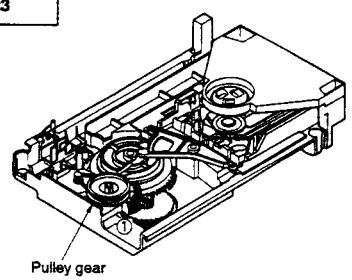
1. Remove the 2 screws(❶, ❷).
2. Remove the reinforcing plate.



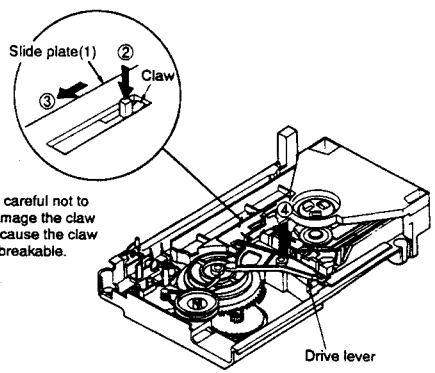
3. Remove the drive gear(1) and drive gear(2).

Ref.No. 23 — Removal of the drive lever

Procedure 1→2→5→22→23



1. Rotate the pulley gear to full position in the direction of arrow①.

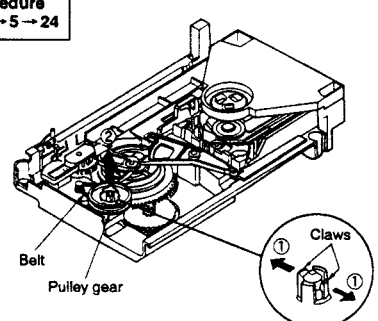


Note) Be careful not to damage the claw because the claw is breakable.

2. Push the claw in the direction of arrow②, and then move the slide plate(1) in the direction of arrow③.
3. Remove the drive lever in the direction of arrow④.

Ref.No. 24 — Removal of the pulley gear

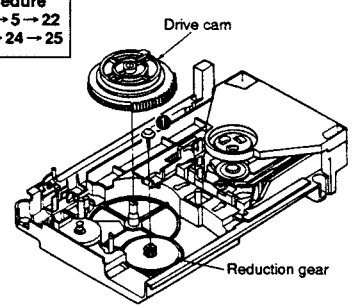
Procedure 1→2→5→24



1. Remove the belt.
2. Release the 2 claws in the direction of arrow①, and then remove the pulley gear in the direction of arrow②.

Ref.No. 25 — Removal of the drive cam and reduction gear

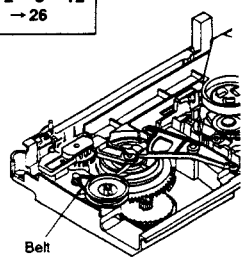
Procedure 1→2→5→22→23→24→25



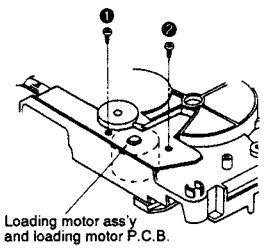
1. Remove the drive cam.
2. Remove 1 screw(❶).
3. Remove the reduction gear.

Ref.No. 26 — **Removal of the loading motor ass'y and loading motor P.C.B.**

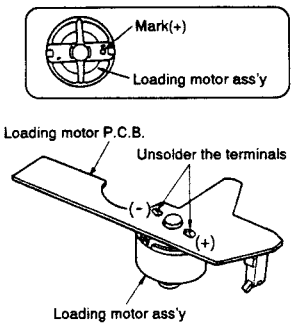
Procedure 1→2→5→12→26



1. Remove the belt.



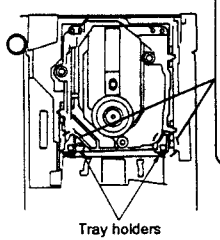
2. Remove the 2 screws(❶, ❷).
3. Remove the loading motor ass'y and loading motor P.C.B.

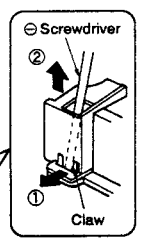


4. Unsolder the terminals of the loading motor ass'y.

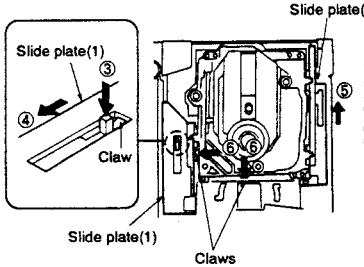
Ref.No. 27 — **Removal of the traverse deck ass'y**

Procedure 1→2→5→27

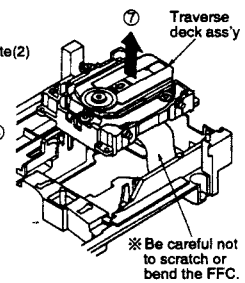




1. While pushing the claw of tray holders in the direction ① using the ⊖ screwdriver, remove the tray holder in the direction of arrow ②.



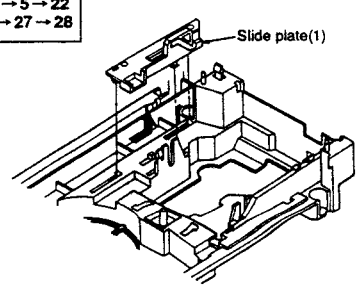
2. Push the claw in the direction of arrow ③, and then move the slide plate(1) in the direction of arrow ④.
3. Move the slide plate(2) in the direction of arrow ⑤.



4. Release the 2 claws in the direction of arrow ⑥, and then remove the traverse deck ass'y in the direction of arrow ⑦.

Ref.No. 28 — **Removal of the slide plate(1)**

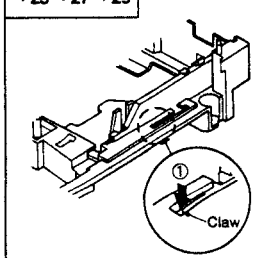
Procedure 1→2→5→22→23→27→28

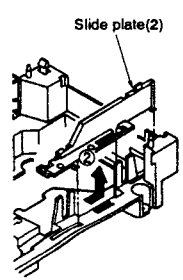


• Remove the slide plate(1) in the direction of arrow.

Ref.No. 29 — **Removal of the slide plate(2)**

Procedure 1→2→5→22→23→27→29

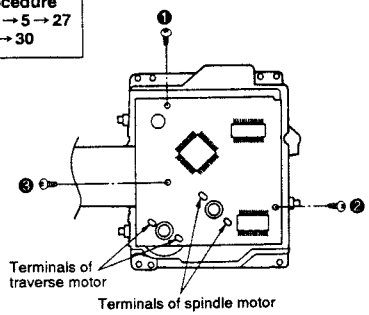




• Push the claw in the direction of arrow ①, and then remove the slide plate(2) in the direction of arrow ②.

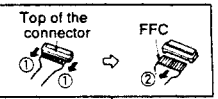
Ref.No. 30 — **Removal of the servo P.C.B.**

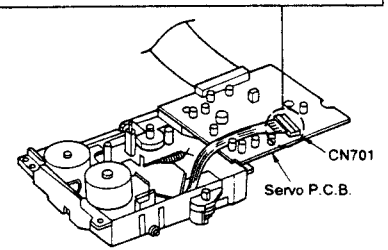
Procedure 1→2→5→27→30



1. Remove the 3 screws(❶~❸).
2. Unsolder the 2 terminals of spindle motor.
3. Unsolder the 2 terminals of traverse motor.

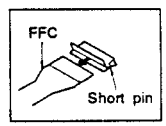
1. Push the top of the connector in the direction of arrow ①.
2. Remove the FFC in the direction of arrow ②.





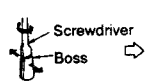
4. Remove the FFC from connector(CN701).

Caution:
Insert a short pin into the traverse unit FFC.
(Refer to " handling precautions for traverse deck " on page 9.)

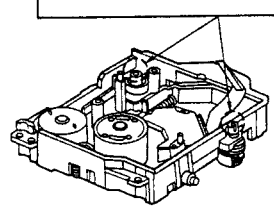


Ref.No. 31 — **Removal of the traverse deck ass'y**

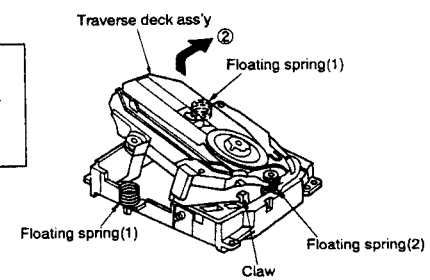
Procedure 1→2→5→27→30→31



1. Widen the bosses by using a regular screwdriver or similar object.
2. Pull out the pins.



1. Remove the 2 pins in the direction of arrow ①.



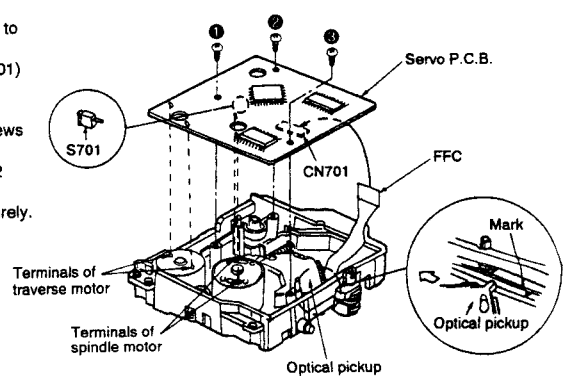
2. Release the claw, and then remove the traverse deck ass'y in the direction of arrow ②.

Caution:
Be careful not to lose the 3 springs because those will also be removed on removal of the traverse deck ass'y.

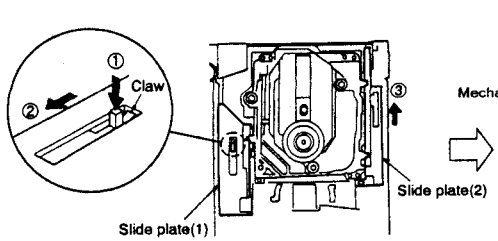
■ INSTALLATION OF SERVO P.C.B.

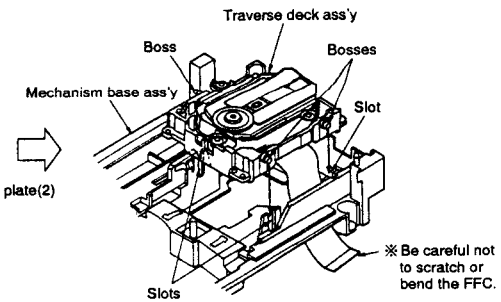
1. When installing servo P.C.B., move the optical pickup to the more external side than the mark (▲). (When the optical pickup is not moved, the switch(S701) on the servo P.C.B. may be broken.)
2. Connect the FFC to the connector(CN701).
3. Install the servo P.C.B. to the traverse unit with 3 screws (❶~❸).
4. Solder the 2 terminals of the traverse motor and the 2 terminals of the spindle motor.

Note: • Insert the FFC into the connector and lock securely. After installing the motor with screws, solder
• each motor terminal.



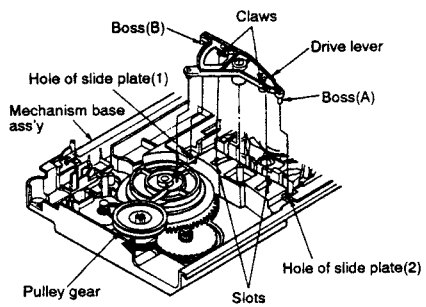
■ Installation of the traverse deck ass'y





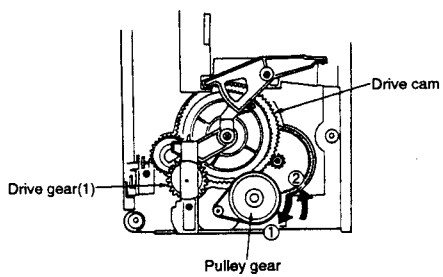
1. Push the claw in the direction of arrow①, and then move the slide plate(1) in the direction of arrow②.
2. Move the slide plate(2) in the direction of arrow③.
3. Align the 3 bosses of traverse deck ass'y with the slots of mechanism base ass'y.

■ Installation of the drive lever



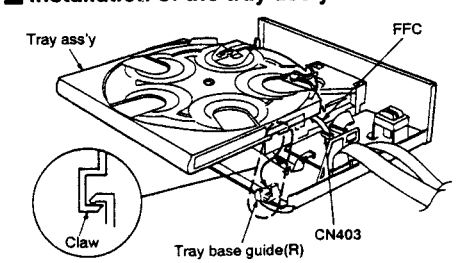
1. Rotate the pulley gear to full position in the direction of arrow.
2. Align the boss(A) with the hole of slide plate(2).
3. Align the boss(B) with the hole of slide plate(1).
4. Align the claws of drive lever with the slots of loading mechanism ass'y.

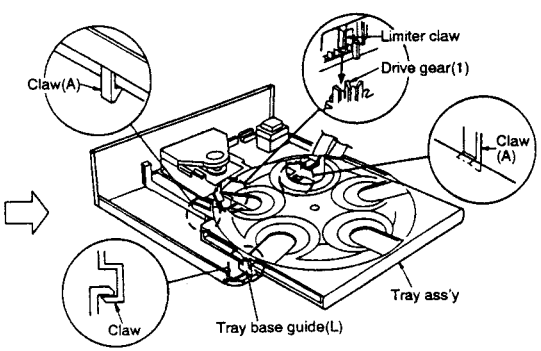
■ Positioning of the drive cam



1. Rotate the pulley gear to full position in the direction of arrow①.
2. Then, rotate the pulley gear in the direction of arrow②.
3. When the drive gear(1) stops rotating, turn off that pulley gear is rotating.

■ Installation of the tray ass'y





1. Attach the FFC to the connector(CN403).
2. Fit the claws on the right side of the tray ass'y underneath the claws on the tray base guide(R).
3. Fit the claws on the right side of the tray ass'y underneath the claws on the tray base guide(L).
4. Fit the limiter claw on the tray ass'y between the teeth of the drive gear(1).
5. Catch the 2 claws(A) with the mechanism base ass'y.
6. After installing the tray ass'y, check that it moves smoothly.

■ HOW TO CHECK THE MAIN AND SERVO P.C.B.

1. Remove the cabinet. (See Ref.No.1 of the disassembly instructions.)
2. Remove the front panel ass'y. (See Ref.No.2 of the disassembly instructions.)
3. Remove the tray ass'y. (See Ref.No.5 of the disassembly instructions.)
4. Remove the cable holder. (See Ref.No.6 of the disassembly instructions.)
5. Remove the clamp plate ass'y. (See Ref.No.10 of the disassembly instructions.)
6. Remove the fixed plate, magnet and clamper. (See Ref.No.11 of the disassembly instructions.)

● **Check the main P.C.B.**

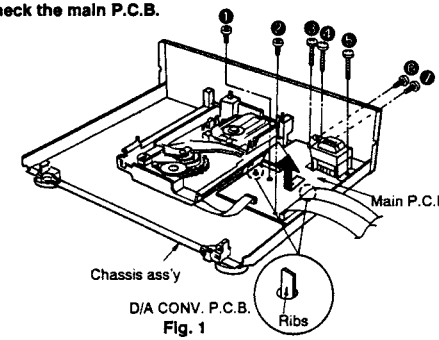


Fig. 1

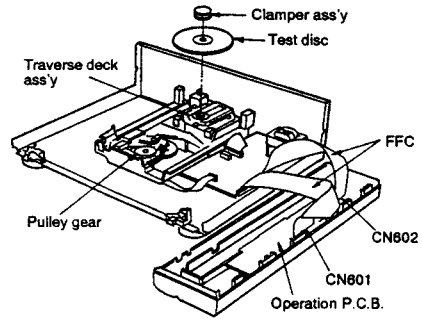


Fig. 2

7. Remove the 7 screws(❶~❼).
8. Lift up the main P.C.B. to release the 2 ribs of chassis ass'y, and then remove the main P.C.B. in the direction of arrow.
9. Rotate the pulley gear in the direction of arrow until traverse deck ass'y comes up.
10. Place the test disc and secure it by using the clamper ass'y.
11. Connect the 2 FFC (CN601, CN602) as shown in Fig. 2.
12. Set up the main P.C.B.
13. Connect the main P.C.B. ground terminal (line out terminal) to the chassis ass'y with a lead wire.
14. When checking the soldered surface of the main P.C.B., do as shown in Fig. 3.

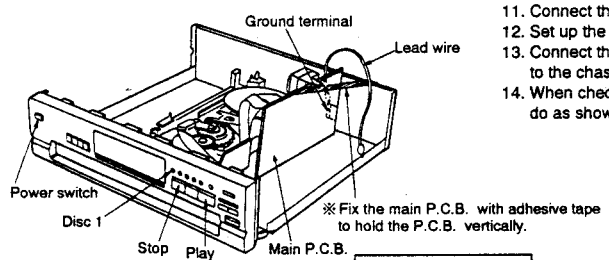


Fig. 3

How to play the disc

Unplug the set previously.

While pressing 3 keys of STOP(■), PLAY(▶), and DISC 1 simultaneously, insert the power plug of the set into the plug socket.

NOTE:
Be sure to begin pressing the 3 keys before plugging the set. Otherwise, the Service Mode cannot be set.

FL lights up? — No → Press the POWER key (POWER ON). → FL lights up.

Yes

Withdraw hand from the 3 keys.

Mount the disc on the turntable and press the PLAY key.

NOTE:
Make sure that the traverse mechanism is then in UP(PLAY)position.

Service Mode setting

When checking the main/servo P.C.B. of this set, remove the rotary tray previously.
After the rotary tray is removed, the microcomputer is kept from issuing PLAY command even when the PLAY key is pressed.
Stated above is the procedure of setting the Service Mode for keeping the microcomputer in the PLAY mode even after removal of the rotary tray.

● **Check the servo P.C.B.**

7. Remove the mechanism base ass'y. (See Ref.No.12 of the disassembly instructions.)
8. Remove the traverse deck ass'y. (See Ref.No.27 of the disassembly instructions.)

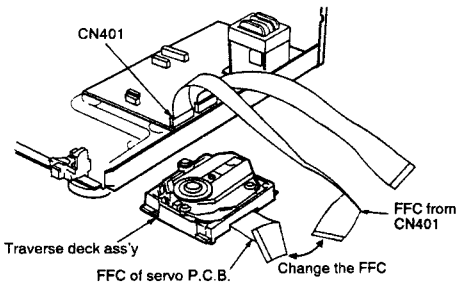


Fig. 4

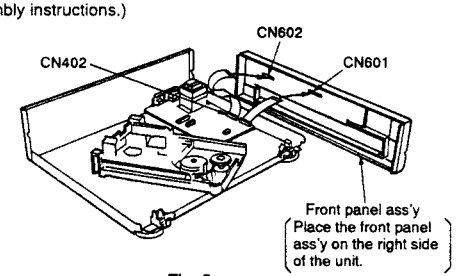


Fig. 5

9. Replace the FFC of servo P.C.B. to the FFC (CN401) of main P.C.B.

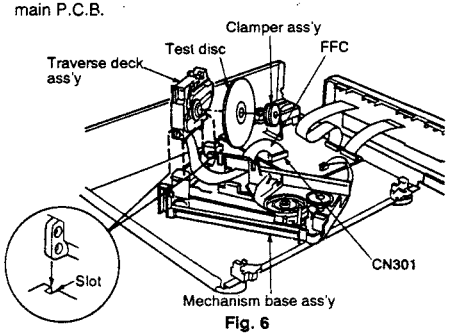
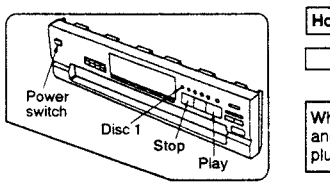


Fig. 6

10. Connect the FFC as shown in above.
    (Between CN401 and CN601
    Between CN402 and CN602)
11. Insert the traverse deck in the slot of mechanism base ass'y.
12. Connect the FFC of servo P.C.B. to the connector (CN301) of main P.C.B.
13. Set the test disc on the traverse deck ass'y, and then fix the traverse deck ass'y with clamper ass'y.
14. When checking the soldered surface of servo P.C.B., do as shown in Fig. 7.

Notes:

- After completing the check, restore the replaced FFC to their original positions.



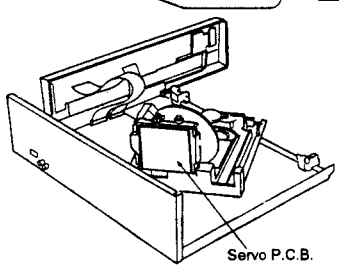


Fig. 7

How to play the disc

Unplug the set previously.

While pressing 3 keys of STOP(■), PLAY(▶), and DISC 1 simultaneously, insert the power plug of the set into the plug socket.

NOTE:
Be sure to begin pressing the 3 keys before plugging the set. Otherwise, the Service Mode cannot be set.

FL lights up?

No → Press the POWER key (POWER ON). → FL lights up.

Yes

Withdraw hand from the 3 keys.

Mount the disc on the turntable and press the PLAY key.

NOTE:
Make sure that the traverse mechanism is then in UP(PLAY)position.

Service Mode setting

When checking the main/servo P.C.B. of this set, remove the rotary tray previously.
After the rotary tray is removed, the microcomputer is kept from issuing PLAY command even when the PLAY key is pressed. Stated above is the procedure of setting the Service Mode for keeping the microcomputer in the PLAY mode even after removal of the rotary tray.

■ OPERATING THE UNIT WITHOUT THE FRONT PANEL ASS'Y

(OPERATION P.C.B. AND KEYS)

A Turning off the back-up power to the microprocessor(IC 401)

1. Unplug the AC cord.
2. Short the ends of the C401 jumpers at 10 Ω (5W) resistance for at least 1 second.

B Turning the power on again

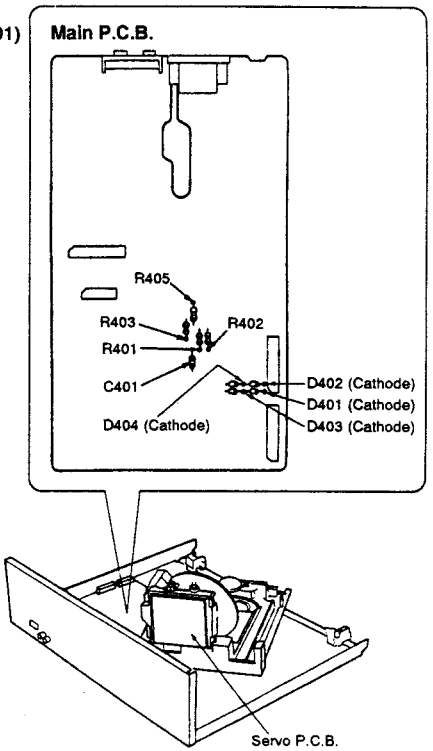
1. Plug the AC cord back in.
2. Short the between the following jumpers simultaneously:
   - The D401 cathode and R401 from IC401 (equivalent to pressing the STOP button).
   - The D401 cathode and R403 from IC401 (equivalent to pressing the PLAY button).
   - The D402 cathode and R401 from IC401 (equivalent to pressing the DISC 1 button).
3. Keeping the above shorts in place, short between the D404 cathode and R405 from IC401 for 1 second to turn on the power to the main unit.
4. Remove the shorts placed in step 2.

C Using the machine

- To play, short between the D401 cathode and R403 from IC401 (equivalent to pressing the PLAY button).
- To pause, short between the D401 cathode and R402 from IC401 (equivalent to pressing the PAUSE button).
- To stop, short between the D401 cathode and R401 from IC401 (equivalent to pressing the STOP button).
- To move forward, short between the D402 cathode and R402 from IC401 (equivalent to pressing the F.SKIP button).
- To move backward, short between the D402 cathode and R403 from IC401 (equivalent to pressing the R.SKIP button).
- To search in the forward direction, short between the D403 cathode and R402 from IC401 (equivalent to pressing the F.SEARCH button).
- To search in the backward direction, short between the D403 cathode and R403 from IC401 (equivalent to pressing the R.SEARCH button).

D Finishing off

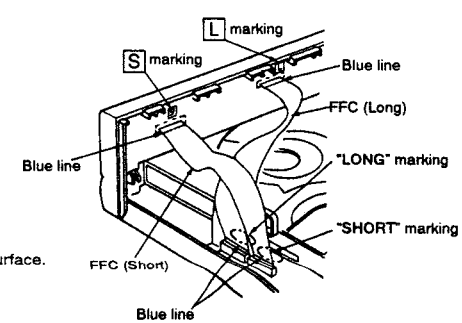
1. Unplug the AC cord.
2. Short the ends of the C401 jumpers at 10 Ω (5W) resistance.



■ Installation of the FFC

- When connecting the FFC, connect as shown right.
- Connect as follows:
  Short FFC ; between Connector [S] and SHORT
  Long FFC ; between Connector [L] and LONG
- Connect the FFC (Long/Short) with blue line upward to the operation P.C.B. connectors .
- Connect the FFC (Long/Short) with blue line outward to the main P.C.B. connectors.

NOTE:
The pin numbers of each connector are marked on the P.C.B. surface.



SL-PD687

■ AUTOMATIC ADJUSTMENT RESULTS DISPLAY FUNCTION

(SELF-CHECK FUNCTION)

The unit contains a function which displays the result of the automatically adjustment of the servo circuits (tracking, focus servo, etc.) as an error code on the FL display.
The error code display serves as a repair guide showing the automatically adjustment circuit is at fault. The procedures for displaying the error codes are given below.

• Procedures to display the error code

(1) Procedure to display the error code before disassembly (finished unit)
1. When the [POWER] key is pressed while holding down the [STOP (■)], [PAUSE (▮▮)] and [PLAY (▶)] keys simultaneously, the FL display illuminates, release the power turns on.
2. When the FL display illuminates, release the [STOP (■)], [PAUSE (▮▮)] and [PLAY (▶)] keys.
3. Press the [OPEN/CLOSE (▲)] key to open the disc tray and load the test disc (SZZP1054C).
4. Press the [PLAY (▶)] key to start the play operation.
5. After the time display appears, press the [STOP (■)] key to display the error code. (e.g. **E-0**)
6. The error code display can be used as a repair guide showing which servo circuit is at fault. (See Error Code Based Troubleshooting.)

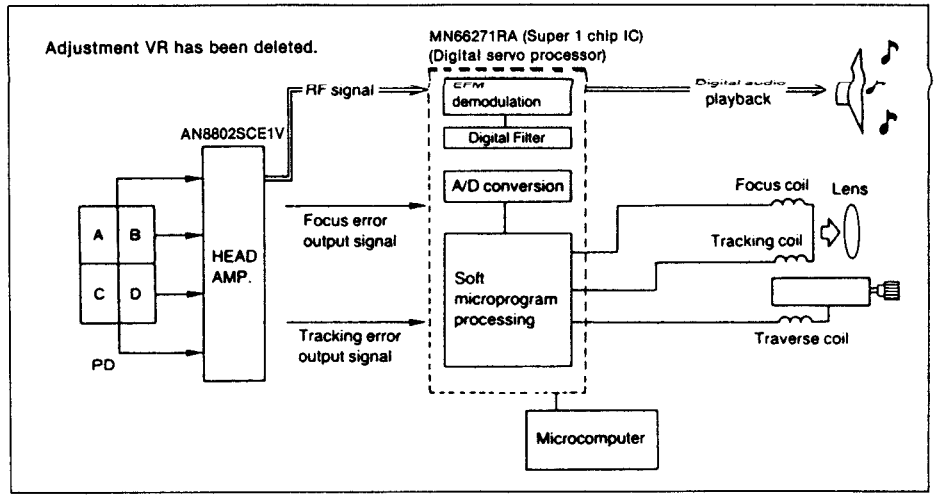
(2) Procedure to display the error code when disassembled
1. Prepare the unit as described in "How to Check the Main and Servo P.C.B." on pages 19, 20.
2. Press the [POWER] key while holding down the [STOP (■)], [PLAY (▶)] and [DISC 1] keys simultaneously.
3. When the FL display illuminates, release the [STOP (■)], [PLAY (▶)] and [DISC 1] keys.
4. Load the test disc (SZZP1054C) on the turntable and secure it with the clamper ass'y.
5. Perform steps 4 and 5 in section (1) above.

• Error code based troubleshooting

※ The unit is satisfactory if the error code is **E-0** of **E-2**.
※ Before testing, check that the test disc is free of scratches and dirt and optical pickup is clean.

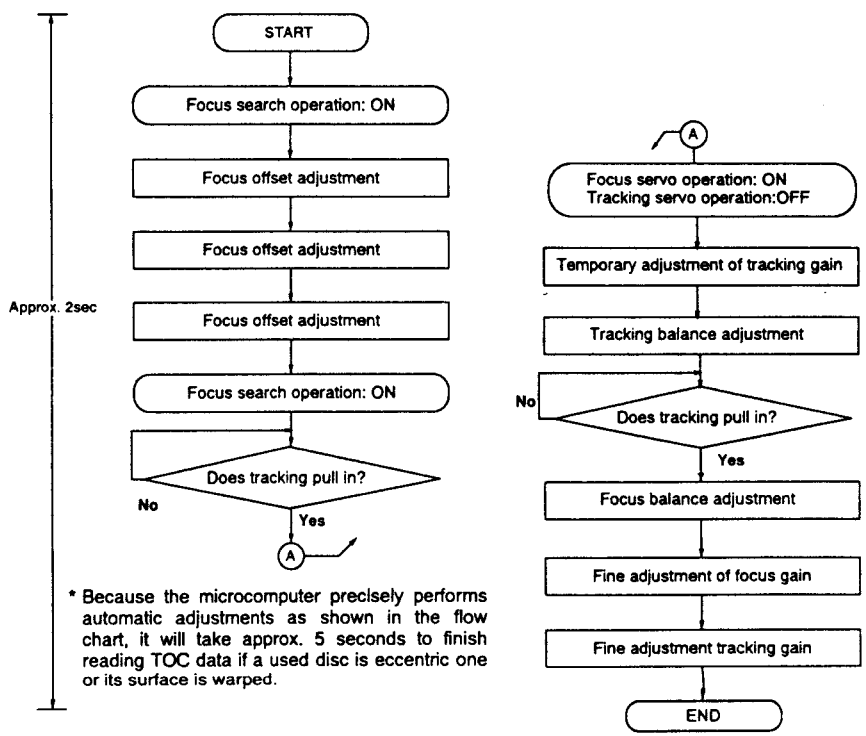
FL error code display	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
E-1	Focus and tracking offset adjustments not completed in the specified time period.	① Clocks X1 and X2, power supply VDD, and reset/RST, all on IC702 ② MDATA, MCLK, MLD, and SENSE signals to/from mechanism controller	MDATA	IC702 ⑥ pin		4.8V
			MCLK	IC702 ⑦ pin		4.8V
			MLD	IC702 ⑨ pin		
			SENSE	IC702 ⑩ pin	0V	0V
			/RST	IC702 ⑪ pin	4.9V	4.9V
			X1	IC702 ⑭ pin		
			X2	IC702 ⑮ pin		
E-3 E-5 E-7 E-9 E-B E-D E-F	Disc play unstable	① Scratches or contaminants on disc surface ② Focus and tracking servo circuits (check waveforms, voltages, and part values.) ③ Spindle driver circuit ④ Optical pickup	FE	IC702 ㉜ pin		2.4V
			TE	IC702 ㉝ pin		2.4V
			FOD	IC702 ㉘ pin	2.4V	2.4V
			TRD	IC702 ㉗ pin	2.4V	2.4V
			KICK	IC702 ㉖ pin	2.4V	2.4V
			/FLOCK	IC702 ① pin	0V	4.9V
			/RF DET	IC702 ㉙ pin	0V	4.8V
			RF	TJ701		3.4V
			STAT	IC702 ⑰ pin	3.5V	0V
E-4 E-6 E-C E-E	Best Eye (PD Balance) adjustment not completed in the specified time period.	① Scratches or contaminants on disc surface ② Focus and Tracking servo circuit (check waveforms, voltages, and part values.) ③ Optical pickup	FBAL	IC702 ⑱ pin	2.5±1.25V	2.5±1.25V
			RF	TJ701		3.4V
			FE	IC702 ㉜ pin		0V
			/TLOCK	IC702 ⑫ pin	0V	0V
			OFT	IC702 ㉞ pin	0V	0V
E-8 E-A	Focus or Tracking gain adjustment not completed in the specified time period.	① Scratches or contaminants on disc surface ② Focus and Tracking servo circuit (check waveforms, voltages, and part values.) ③ Optical pickup	FE	IC702 ㉜ pin		2.4V
			TE	IC702 ㉝ pin		2.4V
			/TLOCK	IC702 ⑫ pin	0V	0V
			OFT	IC702 ㉞ pin	0V	0V

■ DIGITAL SERVO SYSTEM



The following flow chart shows the sequence of automatic adjustments.

• Flow chart automatic adjustment sequence



* Because the microcomputer precisely performs automatic adjustments as shown in the flow chart, it will take approx. 5 seconds to finish reading TOC data if a used disc is eccentric one or its surface is warped.

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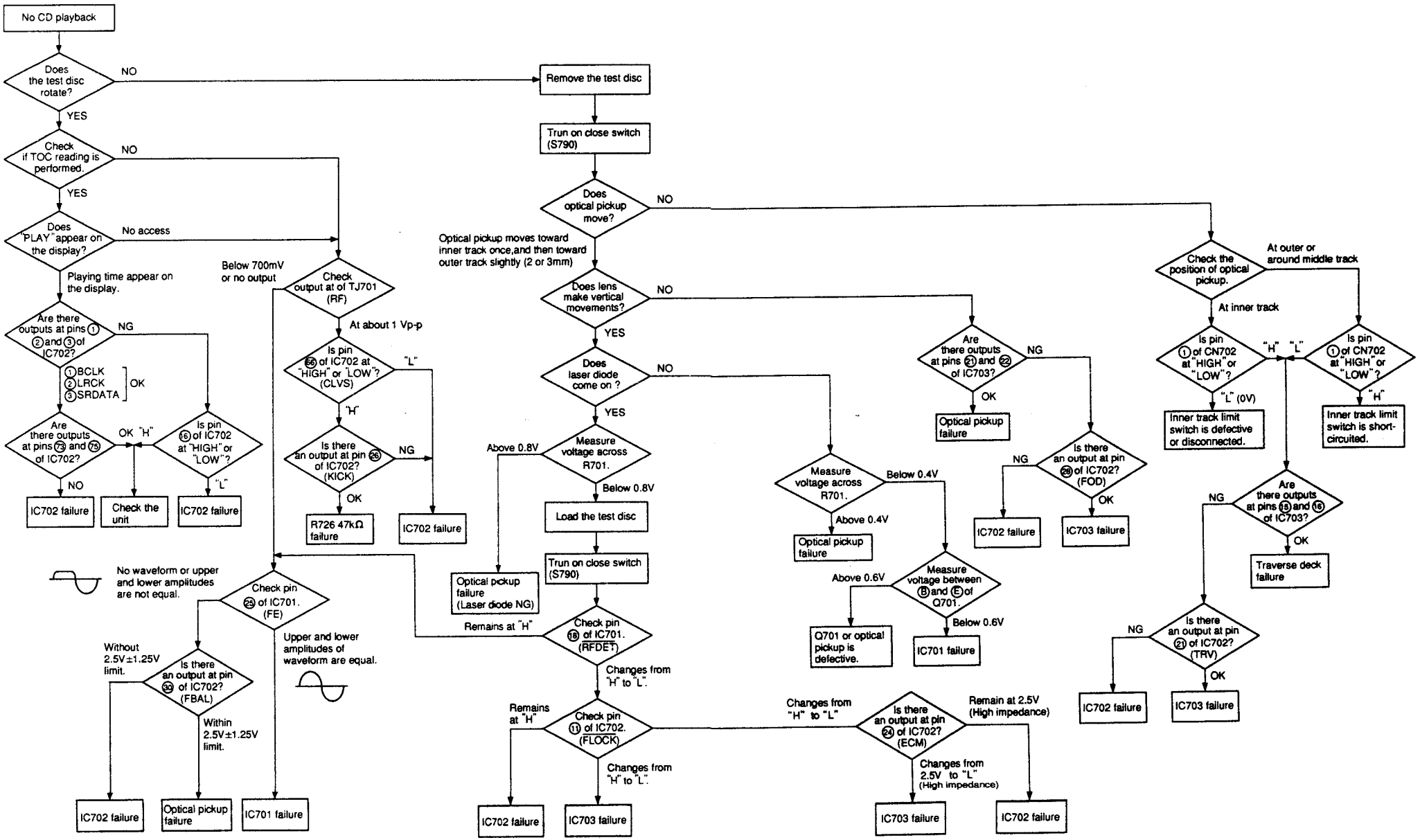
■TROUBLESHOOTING


No CD playback
Does the test disc rotate?
NO
YES
Check if TOC reading is performed.
NO
YES
Does "PLAY" appear on the display?
No access
Playing time appear on the display.
Are there outputs at pins ① ② and ③ of IC702?
NG
①BCLK ②LRCK ③SRDATA
OK
Are there outputs at pins ⑦④ and ⑦⑤ of IC702?
OK "H"
Is pin ⑯ of IC702 at "HIGH" or "LOW"?
NO
"L"
IC702 failure
Check the unit
IC702 failure
Below 700mV or no output
Check output at of TJ701 (RF)
At about 1 Vp-p
Is pin ⑤⑤ of IC702 at "HIGH" or "LOW"? (CLVS)
"L"
"H"
Is there an output at pin ㉖ of IC702? (KICK)
NG
OK
R726 47kΩ failure
IC702 failure
No waveform or upper and lower amplitudes are not equal.
Check pin ㉕ of IC701. (FE)
Upper and lower amplitudes of waveform are equal.
Without 2.5V±1.25V limit.
Is there an output at pin ㉚ of IC702? (FBAL)
Within 2.5V±1.25V limit.
IC702 failure
Optical pickup failure
IC701 failure
Remove the test disc
Trun on close switch (S790)
Does optical pickup move?
NO
Optical pickup moves toward inner track once,and then toward outer track slightly (2 or 3mm)
Does lens make vertical movements?
NO
YES
Does laser diode come on ?
NO
YES
Above 0.8V
Measure voltage across R701.
Below 0.8V
Load the test disc
Trun on close switch (S790)
Optical pickup failure (Laser diode NG)
Remains at "H"
Check pin ⑱ of IC701. (RFDET)
Changes from "H" to "L".
Remains at "H"
Check pin ⑪ of IC702. (FLOCK)
Changes from "H" to "L".
IC702 failure
IC703 failure
Measure voltage across R701.
Below 0.4V
Above 0.4V
Optical pickup failure
Measure voltage between Ⓑ and Ⓔ of Q701.
Above 0.6V
Below 0.6V
Q701 or optical pickup is defective.
IC701 failure
Changes from "H" to "L"
Is there an output at pin ㉔ of IC702? (ECM)
Remain at 2.5V (High impedance)
Changes from 2.5V to "L" (High impedance)
IC703 failure
IC702 failure
Are there outputs at pins ㉑ and ㉒ of IC703?
NG
OK
Optical pickup failure
Is there an output at pin ㉘ of IC702? (FOD)
NG
OK
IC702 failure
IC703 failure
Check the position of optical pickup.
At outer or around middle track
At inner track
Is pin ① of CN702 at "HIGH" or "LOW"?
"H" "L"
"L" (0V)
Inner track limit switch is defective or disconnected.
Is pin ① of CN702 at "HIGH" or "LOW"?
"H"
Inner track limit switch is short-circuited.
Are there outputs at pins ⑮ and ⑯ of IC703?
NG
OK
Traverse deck failure
Is there an output at pin ㉑ of IC702? (TRV)
NG
OK
IC702 failure
IC703 failure

■ MEASUREMENTS AND ADJUSTMENTS

Warning: This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG: • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

Measuring Instruments and Special Tools

* Test discs
1. Playability test disc (SZZP1054C)
2. Uneven test disc (SZZP1056C)
* Musical program disc (ordinary)
* Dual-beam oscilloscope with bandwidth of 30MHz or better (with EXT. trigger and 1:1 probe).
* Allen wrench (M2.0) (SZZP1101C)
* Lock paint (RZZ0L01)

PREPARATION

1. Remove the cabinet and front panel ass'y (refer to "disassembly instructions" Ref. No. 1, 2).
2. Set the power switch to ON and press the open/close key to close the loading drawer.
3. Press the play key and when the traverse deck reaches it's height position, set the power switch to OFF.
4. Remove the tray ass'y (refer to "disassembly instructions" Ref. No. 5).
5. Remove the clamp plate, fixed plate, magnet and clamper (refer to "disassembly instructions" Ref. No. 10, 11).
6. Place the test disc and secure it by using clamper ass'y. (Refer to Fig. 1)
(refer to "disassembly instructions" Ref. No. 11).
7. Set the unit in the test mode as follows:
(hold the play, stop and disc 1 keys (3 keys) on and set the power switch to ON.)
8. Press the play key and play the test disc.
9. Follow the adjustment procedure.

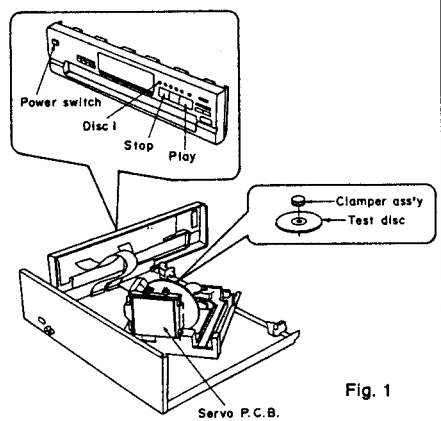
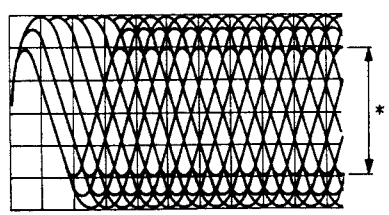


Fig. 1

(1) MECHANICAL ADJUSTMENT

1. Connect the oscilloscope's CH. 1 probe across TJ701 (RF) and TJ702 (VREF) on the servo P.C.B. (Refer to Fig. 3 on page 27)
Oscilloscope setting: VOLT..... 200mV
SWEEP..... 0.5µs.
Input coupling..... AC
2. Switch the player power **ON**, and play track **19** on the test disc (SZZP1056C).
(Playing any other track will prevent the HEX screws from being accessed.)
3. Leave the player in play mode and place it as shown Fig. 3.
4. Alternately adjust the two HEX screws with the 2.0mm allen wrench (SZZP1101C) until the vertical fluctuation of RF signal is minimized and the eye pattern is most stretched. (Refer to Fig. 2)
5. After completing the adjustment, lock the HEX screws with lock paint (RZZ0L01).



*Most stretched eye pattern.

Fig. 2

(2) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

* **Checking Skip Search**
1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

* **Checking Manual Search**
1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

* **Checking Playability**
1. Play the 0.7mm black dot and the 0.3mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

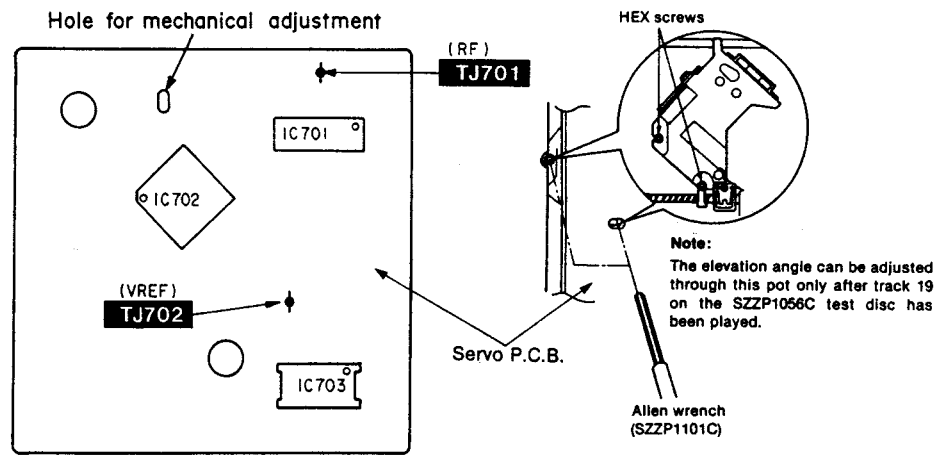


Fig. 3

SL-PD687

■TERMINAL GUIDE

• IC701 (AN8802SCE1V): Servo amp

Pin No.	Mark	I/O Division	Function
1	PDAD	I	Photo detector Bch input without delay
2	PDA	I	Photo detector Ach input without delay
3	LPD	I	Laser PD signal
4	LD	O	Laser power auto control output
5	AMPI	I	RF amp terminal
6	V_{CC}	I	Power supply terminal
7	AMPO	O	RF amp signal
8	CAGC	I	AGC detection capacitor input
9	ARF	O	RF signal
10	CENV	I	RF detect capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	GND	—	GND terminal
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	TES	I	Tracking error shunt input ("H": shunt)
15	PLAY	I	Play signal ("H": ON, "L": OFF)
16	WVEL	I	Double velocity ("H": double, "L": single)

Pin No.	Mark	I/O Division	Function
17	BDO	O	Dropout detection control
18	/RFDET	O	RF det. signal ("L": det.)
19	CROSS	O	Tracking error zero cross output
20	OFTR	O	Off track detection ("H": det.)
21	VDET	O	Oscillation det. signal ("H": det.)
22	ENV	O	Envelope output terminal
23	TEBPF	I	Oscillation detect input terminal (Not used, open)
24	TE	O	Tracking error signal
25	FE	O	Focusing error signal
26	PTO	O	Potention amp output
27	PTI	I	Potention amp input
28	TBAL	I	Tracking balance adj. input
29	FBAL	I	Focus balance adj. input
30	VREF	O	Reference voltage output
31	PDB	I	Photo detector Ach input with delay
32	PDBD	I	Photo detector Bch input with delay

• IC703 (AN8389SE1): Focus coil/tracking coil/traverse motor/spindle motor drive

Pin No.	Mark	I/O Division	Function
1	V_{CC}	I	Power supply terminal
2	VREF	I	Reference voltage input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	GND terminal
6	NC	—	Not used, connected to GND
7	NRESET	O	Reset terminal
8	GND	—	GND terminal
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (Not used, open)

Pin No.	Mark	I/O Division	Function
13	$PV_{CC}1$	I	Driver power supply (1)
14	PGND1	—	Driver GND terminal (1)
15	D1−	O	Motor driver (1) output terminal (−)
16	D1+	O	Motor driver (1) output terminal (+)
17	D2−	O	Motor driver (2) output terminal (−)
18	D2+	O	Motor driver (2) output terminal (+)
19	D3−	O	Motor driver (3) output terminal (−)
20	D3+	O	Motor driver (3) output terminal (+)
21	D4−	O	Motor driver (4) output terminal (−)
22	D4+	O	Motor driver (4) output terminal (+)
23	PGND2	—	Driver GND terminal (2)
24	$PV_{CC}2$	I	Driver power supply (2)

• IC702 (MN66271RA): Servo processor/Digital signal processor/Digital filter/D/A converter

Pin No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock terminal
2	LRCK	O	L/R discriminating signal
3	SRDATA	O	Serial data (Not used, open)
4	$DV_{DD}1$	I	Power supply (digital circuit) terminal
5	$DV_{SS}1$	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L": LOAD)
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Optical servo condition (focus) ("L": lead-in)
12	/TLOCK	O	Optical servo condition (tracking) ("L": lead-in)
13	BLKCK	O	Sub-code block clock (f=75Hz) (Not used, open)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	I	Muting input ("H": MUTE) (Not used, connected to GND)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	/RST	I	Reset signal ("L": reset)
19	SMCK	O	System clock (f=4.2336MHz) (Not used, open)
20	PMCK	O	Frequency division clock signal (Not used, open) ($f=\frac{1}{1.92}\times ck=88.2kHz$)
21	TRV	O	Traverse servo control

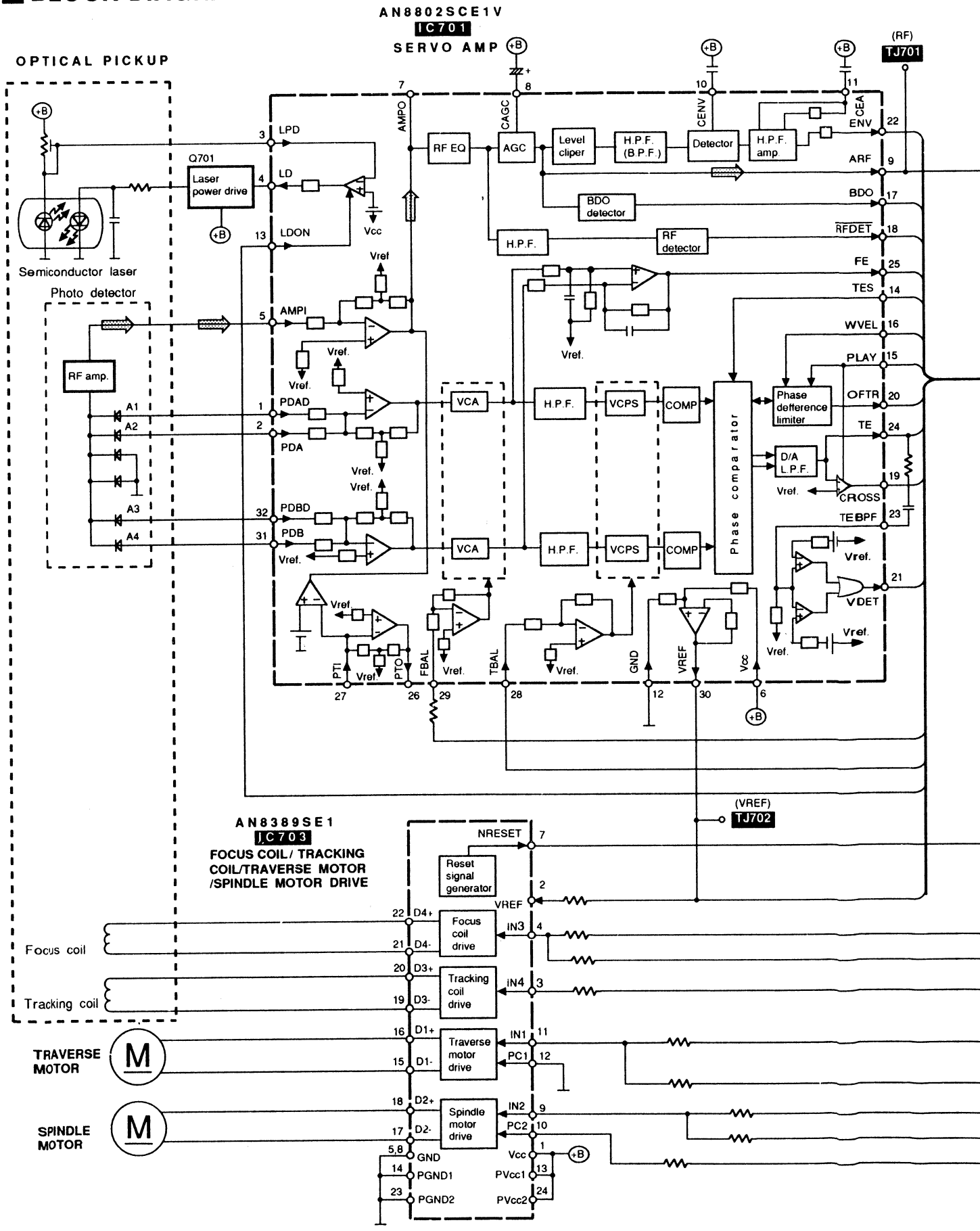
Pin No.	Mark	I/O Division	Function
22	TVD	O	Traverse drive signal
23	PC	O	Turntable motor drive signal ("L": ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output (Not used, open)
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H": det.)
36	OFT	I	Off frack signal ("H": Off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal ("L": detection)
39	BDO	I	Dropout detection signal ("H": dropout)
40	LDON	O	Laser power control ("H": ON)
41	TES	O	Tracking error shunt output ("H": dropout)
42	PLAY	O	Play signal ("H": play)

Pin No.	Mark	I/O Division	Function
43	WVEL	O	Double velocity status signal ("H": double)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal (Not used, open)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I/O	VCO loop filter terminal (Not used, open)
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal (2)
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	EFM	O	EFM signal (Not used, open)
53	PCK	O	PLL extract clock (f=4.3218MHz)
54	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)
55	SUBC	O	Sub-code serial output data (Not used, open)
56	SBCK	I	Sub-code serial input clock (Not used, connected to GND)
57	V_{SS}	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2	O	
60	V_{DD}	I	Power supply terminal
61	BYTCK	O	Byte clock signal (Not used, open)
62	/CLDCK	O	Sub-code frame clock signal (f CLDCK=7.35kHz: Normal) (Not used, open)
63	FCLK	O	Crystal frame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal
65	FLAG	O	Flag terminal
66	CLVS	O	Turntable servo phase synch. signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	O	Sub-code CRC check terminal ("H": OK, "L": NG)
68	DEMPH	O	De-emphasis ON signal ("H": ON) (Not used, open)
69	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
70	/RST2	I	Reset terminal after "MASH" circuit
71	/TEST	I	Test terminal (Normal: "H")
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	$AV_{SS}1$	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal
77	CSEL	I	Frequency control terminal of crystal oscillator (Not used, connected to GND)
78	PSEL	I	Test terminal (Normal: "L")
79	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz)
80	SSEL	I	"SUBQ" terminal mode select ("H": Q code buffer)

• **IC401 (UPD78044A058): System control & FL drive**

Pin No.	Mark	I/O Division	Function
1 ~ 7	G7 ~ G1	O	Grid signal of FL display
8	VDD	I	Power supply terminal
9	MCLK	O	Command clock signal
10	MDATA	O	Command data signal
11	MLD	O	Command load signal ("L" LOAD)
12	SENSE	I	Sense signal
13	DMUTE	O	Muting control signal
14	SQCK	O	Sub-code Q register clock
15	NC	—	Not connected
16	SUBQ	I	Sub-code Q data
17	/RESET	I	Reset signal input
18	ZSENSE	—	Not used, connected to GND
19	REC. EN	I	Synchro. rec. control terminal
20	AVSS	—	GND terminal
21	/RSTSV	O	Reset signal output
22	OPEN	I	Open detect terminal
23	DIR	O	Motor control signal
24	TRUN	O	
25	LOAD	O	Motor control signal
26	DAC	O	Not used, open
27	RESTSW	I	Rest position de
28	UP/DOWN	I	Traverse deck up/down det. terminal
29	AVDD	I	Power supply terminal
30	AVREF	I	Power supply terminal
31	XT1	—	Not used, connected to GND
32	XT2	—	Not used, open
33	VSS	—	GND terminal
34	X1	I	Crystal Osc terminal (F: 4.2336MHz)
35	X2	O	
36 ~ 42	KEYIN 7 ~ KEYIN 1	I	Key return signal
43	PWM	O	Motor control signal
44	POFF	I	Power det. terminal
45	POSITION	I	Rotary tray position det. terminal
46	SPEED	I	Loading motor speed sensor signal
47	REMOCON	I	Remote control signal input
48	IC	—	Not used, connected to GND
49	/TLOCK	I	Optical servo condition (tracking) input
50	/FLOCK	I	Optical servo condition (focus) input
51	STAT	I	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
52	VDD	I	Power supply terminal
53	POWER	O	Power ON/OFF output terminal
54	SYNCHRO	—	Not used, open
55 ~ 60	KEYOUT 6 ~ KEYOUT 1	O	Key scan signal
61 ~ 70	S16 ~ S7	O	Segment signal of FL display
71	VPP	I	Power supply terminal
72 ~ 77	S6 ~ S1	O	Segment signal of FL display
78	EXDATA	O	Not used, open
79	EXCLK	O	Not used, open
80	G8	O	Grid signal of FL display

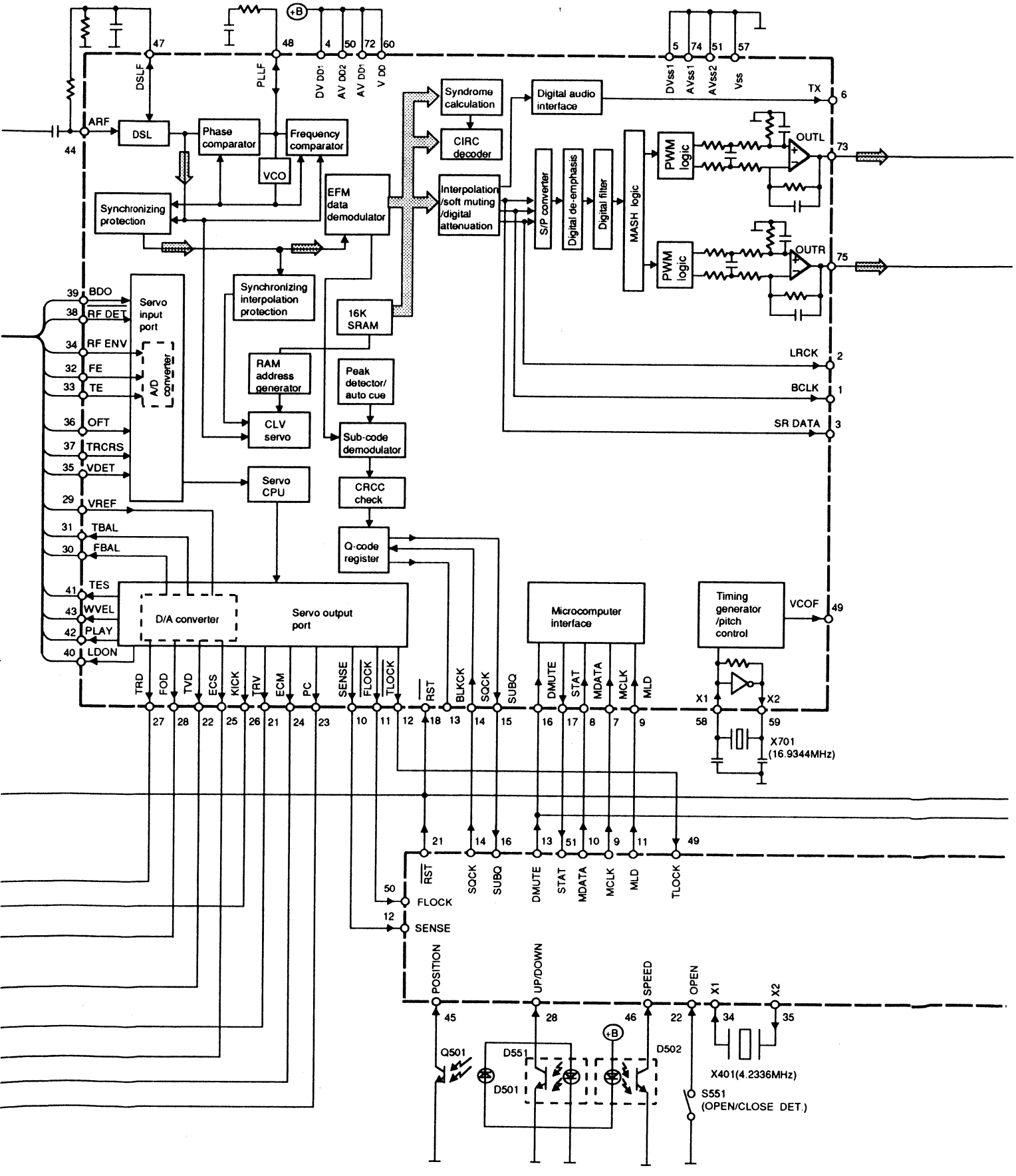
■ BLOCK DIAGRAM

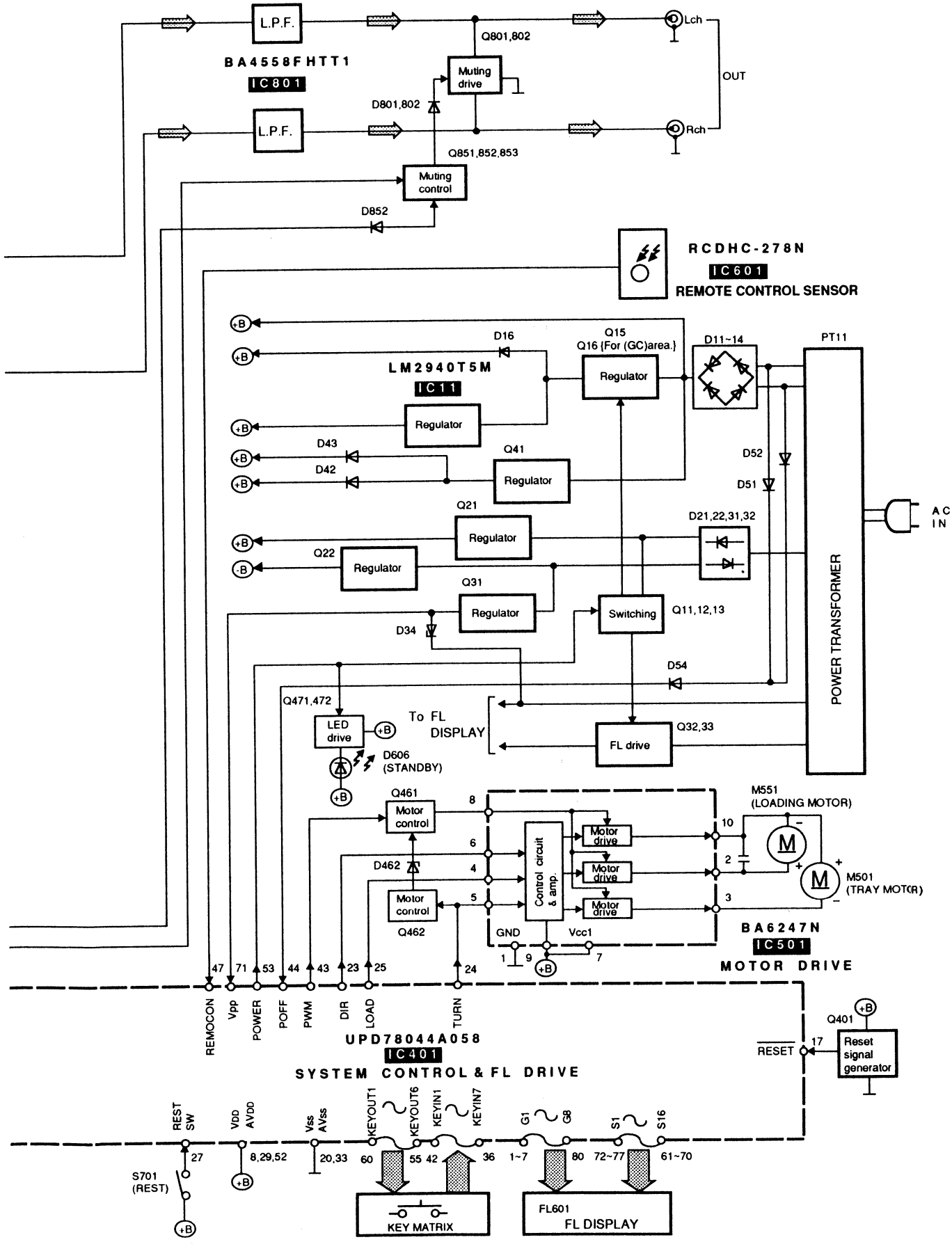


MN66271RA

IC702

SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR / DIGITAL FILTER / D/A CONVERTER





Note:

⇒ Audio signal

■ SCHEMATIC DIAGRAM (Parts list on pages 46, 47, 52, 53.)

(This schematic diagram may be modified at any time with development of new technology.)

Note:

- **S11** : Voltage adj. switch in "240V" position. (For (GC) area only.) (110V ↔ 127V ↔ 220V ↔ 240V)
- **S551** : Disc tray "Open/Close" detector switch.
- **S601** : Time mode (TIME MODE) switch.
- **S602** : Spiral (SPIRAL) switch.
- **S603** : Random mode (RANDOM MODE) switch.
- **S604** : Repeat (REPEAT) switch.
- **S607** : Stop (■) switch.
- **S608** : Pause (▮▮) switch.
- **S609** : Play (▶) switch.
- **S610~S614**: Disc (DISC 1~5) switches. (S610: 1, S611: 2, S612: 3, S613: 4, S614: 5)
- **S615** : Disc skip (DISC SKIP) switch.
- **S616** : Program mode (PROGRAM MODE) switch.
- **S617, 618** : Search (SEARCH) switches. (S617: ◀◀, S618: ▶▶)
- **S619, 620** : Skip (SKIP) switches. (S619: I◀◀, S620: ▶▶I)
- **S621** : Loading drawer open/close (▲ OPEN/CLOSE) switch.
- **S631** : Power "STANDBY /ON" (POWER, STANDBY ON) switch.
- **S651~S662**: Numeric (1~10, 0, > 10) switches. S651: (1), S652: (2), S653: (3), S654: (4), S655: (5), S656: (6), S657: (7), S658: (8), S659: (9), S660: (10), S661: (> 10), S662: (0)
- **S701** : Rest detector.

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

*The parenthesized are the values of voltage generated during playing (Test disc 1kHz, L+R, 0dB), others are voltage values in stop mode.

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used as occation calls. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- The supply part number is described alone in the replacement parts.

Part No.	Production Part No.	Supply Part No.
IC11	LM2940T5M	LM2940T5

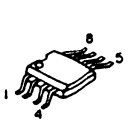
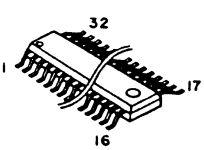
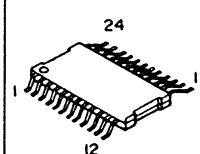
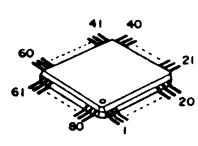
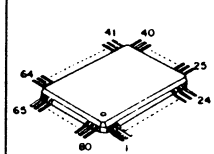
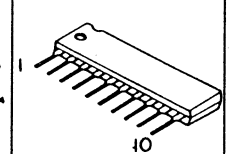
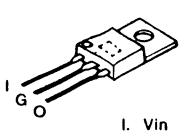
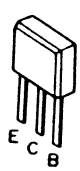
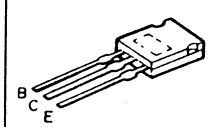
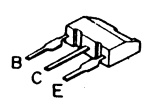
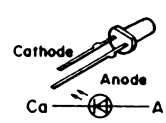
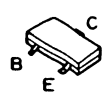
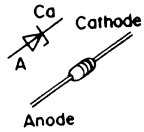
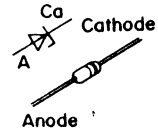
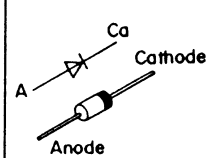
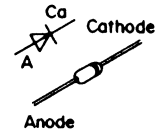
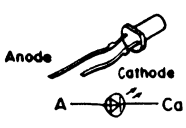
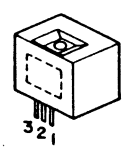
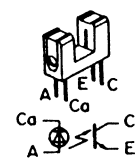
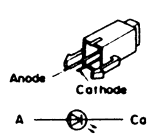
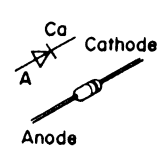
- ▬▬▬ / ▬ ▬ ▬ : Positive voltage lines and negative voltage lines.
  ⇨ : audio signal lines.

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

• Terminal guide of IC's, transistors and diodes.

BA4558FHTT1 	AN8802SCE1V 	AN8389SE1 	MN66271RA 	UPD78044A058 	BA6247N 
LM2940T5M  I. Vin G. GND O. Vout		2SA1309AIQST 2SC3311AIQST 2SD1450RSTTA UN4112AITA UN4114TA UN4212AITA UN4214AITA UN4215TA	2SD2037EFTA 	2SB1238QSTV6 2SD1862QRTV6 	PT381TB 
2SB709STW 		MA4051MTA MA4062MTA MA4068HTA MA4091MTA MA4056MTA	MA4100MTA MA4270MTA 	RL1N4003N02 	MA165TA 
GL380TB 	RCDHC-278N 	RSQGP1S53V 	SG-206S	LN018304P 	1SS291TA 

SL-PD687

A SERVO CIRCUIT (P.C.Board: on page 43)

△ OPTICAL PICKUP

Q701
2SB709STW
LASER POWER DRIVE

IC701
AN8802SCE IV
SERVO AMP

Terminal guide: on page 28

IC702
MN66271RA
SERVO PROCESSOR/DIGITAL
SIGNAL PROCESSOR/DIGITAL
FILTER/D/A CONVERTER

Terminal guide: on pages 29,30

IC703
AN8389SE1
FOCUS COIL/TRACKING COIL/
TRAVERSE MOTOR/
SPINDLE MOTOR DRIVE

Terminal guide: on page 28

M702 SPINDLE MOTOR

M701 TRAVERSE MOTOR

TRACKING COIL

FOCUS COIL

To H MAIN CIRCUIT (CN301) on page 39

SL-PD687

F LOADING MOTOR CIRCUIT (P.C.Board: on page : 44)

M551 (LOADING MOTOR)

D551 SG-2065 DISC SENSOR

S551 (OPEN/CLOSE)

CN551

CN404

C462 0.01

B TRAY MOTOR CIRCUIT (P.C.Board: on page 44)

M501 (TRAY MOTOR)

D502 RSQGPIS53V SPEED SENSOR

FC502

G SENSOR CIRCUIT (P.C.Board: on page 44)

Direction Select — Amp — Drive

IC501 BA6247N MOTOR DRIVE

CN501

CN403

R462 220

C POWER SWITCH CIRCUIT (P.C.Board: on page 42)

S631 (POWER)

FC601

D PHOTO TRANSISTOR CIRCUIT (P.C.Board: on page 44)

FC503

Q501 PT381 ROTARY POSITION SENSOR

D501 GL380 ROTARY POSITION SENSOR

E OPERATION CIRCUIT (P.C.Board: on pages 43,44)

IC601 RCDHC-278N REMOTE CONTROL SENSOR

D606 LNG1B304P (STANDBY)

FL601 (RSL0170-F)

FL DISPLAY

CN601

CN401

S607 (■) S610 (DISC1) S611 (DISC2) S612 (DISC3) S613 (DISC4) S614 (DISC5)

S608 (▮▮) S620 (SKIP ▶▶|) S618 (SEARCH ▶▶) S616 (PROGRAM MODE) S621 (▲ OPEN/CLOSE)

S609 (◀) S619 (SKIP |◀◀) S617 (SEARCH ◀◀) S601 (TIME MODE)

S662 (0) S654 (4) S658 (8) S603 (RANDOM MODE) S602 (SPIRAL)

S651 (1) S655 (5) S659 (9) S604 (REPEAT)

S652 (2) S656 (6) S660 (10)

S653 (3) S657 (7) S661 (>10) S615 (DISC SKIP)

CN602

CN402

H MAIN CIRCUIT (P.C.Board: on page 41, 42)

To A SERVO CIRCUIT (CN702) on page 37

CN301

TEST SW, SMCK, /RST, STAT, DMUTE, SUBQ, SOCK, BLKCK, /TLOCK, /FLOCK, SENSE, MLD, M DATA, MCLK, P.GND, +B(1), TX, LOSW, +B(2), Rch IN, A.GND, Lch IN

ΔIC11 LM2940T5M REGULATOR

D16 RLN4003N02

Z301

C301 0.01

C17 6.3V100

C16 10V470

TP1 TP2 TP3 TP7 TP8 TP9 TP10

R411 47K R412 22K R461 R463 120

For [GC,GN] areas

120···[E,EB,EG]
270···[GC,GN]

D461 MA4068HTA

C461 10V47

Q461 UN4215TA MOTOR CONTROL

Q462 UN4215TA MOTOR CONTROL

D462 MA4068MTA

R410 10K R409 1K

R413 1K R415 10K

C403 50V1

Q401 2SC3311A1QST RESET

C404 25V4.7 R414 470

C401 C402 6.3V470

R416 1K

STOP PLAY

PLAY T=13.6ms.

IC401 UPD78044A058 SYSTEM CONTROL & FL DRIVE

X401 (4.2336MHz)

F=4.2336MHz

R407 4.7K R406 4.7K R405 4.7K R404 4.7K R403 4.7K

R402 4.7K R401 4.7K

Terminal guide: on page 31

D401 D402 D403 D404 D405 D406 MA165TA

C406 50V1

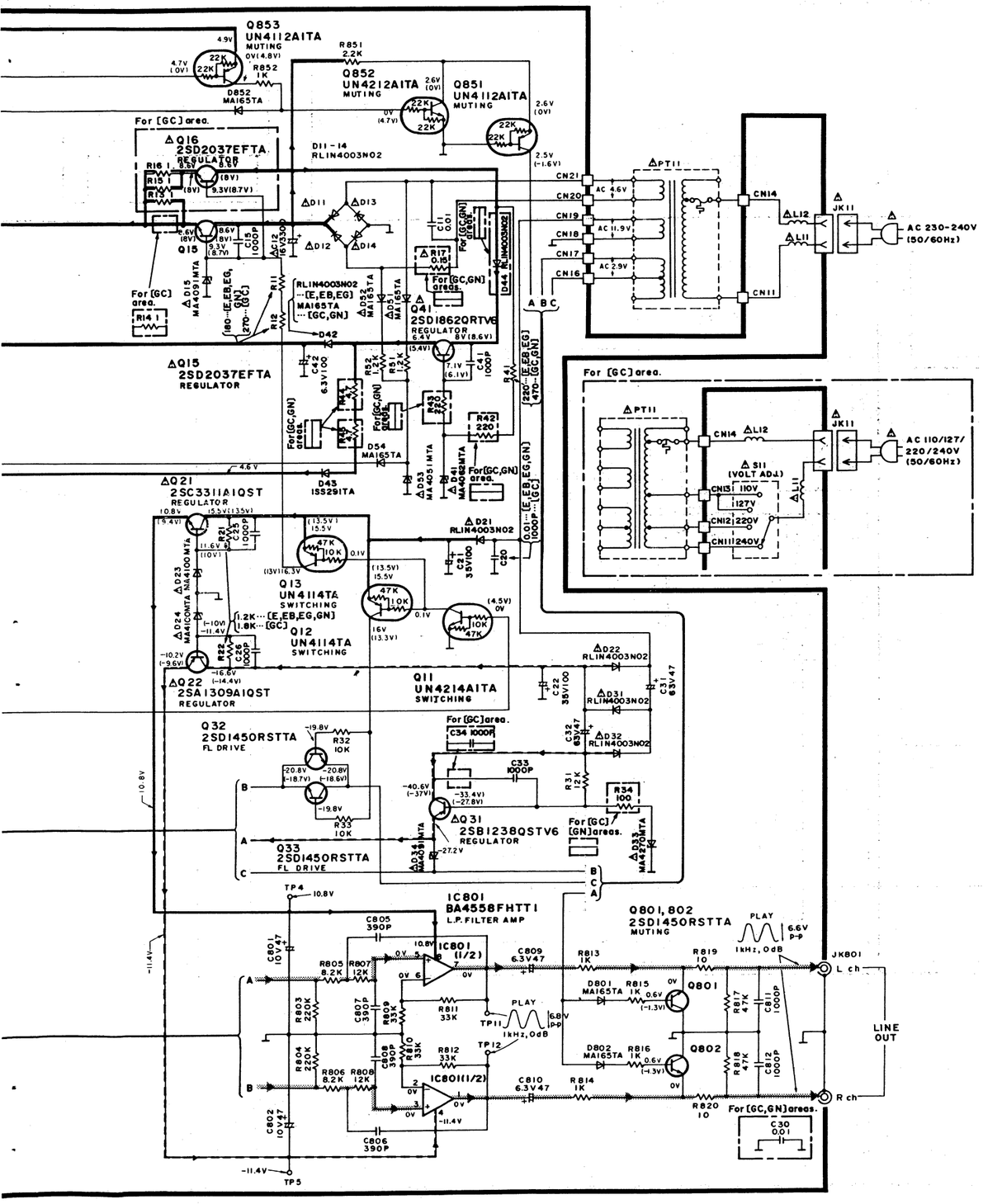
C421 0.01 R421 4.7K

C405 0.01

R472 120 R471 10K

Q472 2SC3311A1QST LED DRIVE

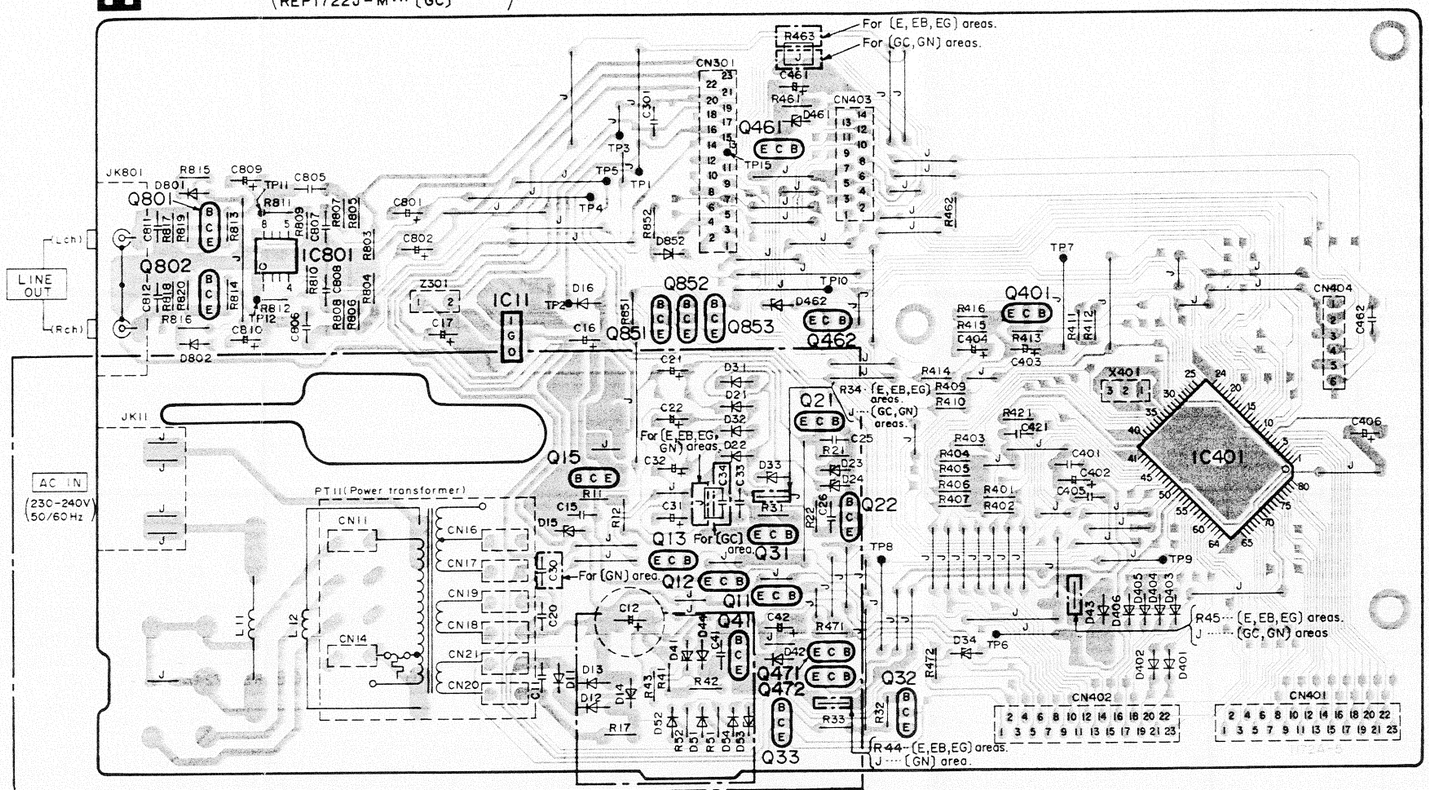
Q471 UN4214A1TA LED DRIVE


Q853
UN4112A1TA
MUTING
Q852
UN4212A1TA
MUTING
Q851
UN4112A1TA
MUTING
D852
MA165TA
R851
2.2K
R852
1K
For [GC] area.
Q16
2SD2037EFTA
REGULATOR
D11 - 14
RLIN4003N02
PT11
CN21
CN20
CN19
CN18
CN17
CN16
AC 4.6V
AC 11.9V
AC 2.9V
CN14
CN11
LI12
LI11
JK11
AC 230-240V
(50/60Hz)
Q15
D15
MA4100MTA
D11
D12
D13
D14
C12
16V330
C15
1000P
RLIN4003N02
...[E,EB,EG,GN]
MA165TA
...[GC,GN]
D32
MA165TA
D44
MA165TA
D42
R11
R12
R14
For [GC] area.
180...[E,EB,EG,GN]
270...[GC]
Q41
2SD1862QRTV6
REGULATOR
8V(8.6V)
D44 RLIN4003N02
For [GC,GN] area.
R17
0.51
C01
For [GC,GN] area.
A B C
Q015
2SD2037EFTA
REGULATOR
C42
6.3V100
R52
1.2K
R51
1.2K
C41
1000P
R41
220...[E,EB,EG]
470...[GC,GN]
For [GC] area.
PT11
CN14
LI12
JK11
AC 110/127/
220/240V
(50/60Hz)
SII
(VOLT ADJ.)
CN13 110V
127V
CN12 220V
CN11 240V
LI11
For [GC,GN] area.
R43
220
R42
220
D54
MA165TA
D53
MA4051MTA
D41
MA4051MTA
For [GC,GN] area.
Q021
2SC3311A1QST
REGULATOR
D43
1SS251TA
D21
RLIN4003N02
0.01...[E,EB,EG,GN]
1000P...[GC]
D23
MA4100MTA
D24
MA4100MTA
R21
C25
1000P
47K
110K
0.1V
Q13
UN4114TA
SWITCHING
Q12
UN4114TA
SWITCHING
1.2K...[E,EB,EG,GN]
1.8K...[GC]
R22
C26
1000P
C2
35V100
C20
47K
110K
0.1V
10K
47K
Q022
2SA1309A1QST
REGULATOR
Q11
UN4214A1TA
SWITCHING
D22
RLIN4003N02
D31
RLIN4003N02
D32
RLIN4003N02
C22
35V100
C31
63V47
C32
63V47
Q32
2SD1450RSTTA
FL DRIVE
R32
10K
C34 1000P
For [GC] area.
C33
1000P
R31
3.3K
R34
100
For [GC] [GN] areas.
Q031
2SB1238QSTV6
REGULATOR
D34
MA4091MTA
D33
MA4270MTA
Q33
2SD1450RSTTA
FL DRIVE
A
B
C
TP4
TP5
IC801
BA4558FHTT1
L.P.FILTER AMP
IC801 (1/2)
IC801(1/2)
C805
390P
C806
390P
C801
10V47
C802
10V47
C809
6.3V47
C810
6.3V47
R805
8.2K
R807
12K
R803
220K
R804
220K
R806
8.2K
R808
12K
C807
390P
C808
390P
R809
33K
R810
33K
R811
33K
R812
33K
TP11
TP12
PLAY
1kHz, 0dB
6.8V p-p
Q801, 802
2SD1450RSTTA
MUTING
PLAY
1kHz, 0dB
6.6V p-p
R813
1K
R814
1K
R819
10
R820
10
D801
MA165TA
D802
MA165TA
R815
1K
R816
1K
Q801
Q802
R817
4.7K
R818
4.7K
C811
1000P
C812
1000P
JK801
L ch
R ch
LINE
OUT
For [GC,GN] areas.
C30
0.01
10.8V
-11.4V

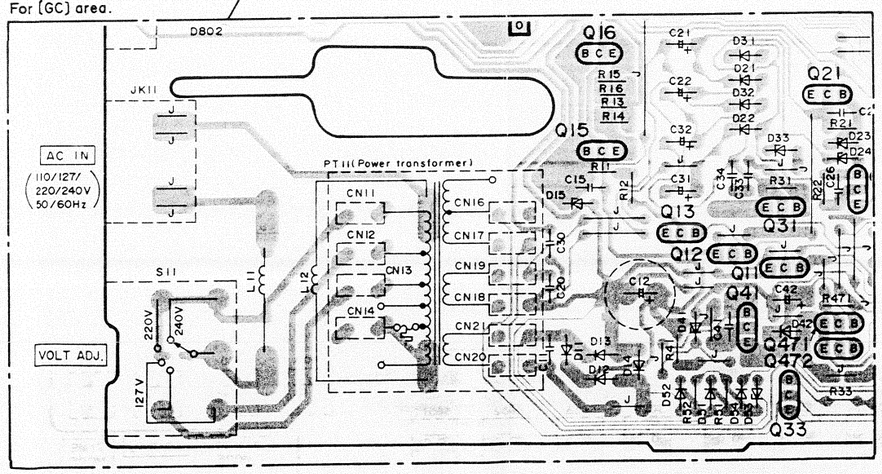
■ PRINTED CIRCUIT BOARDS

(This printed circuit board diagram may be modified at any time with the development of new technology.)

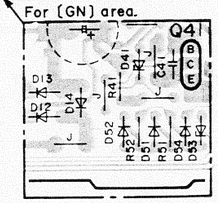
H MAIN P.C.B. (REP1722B-M··· (E, EB, EG)
REP1722C-M··· (GN)
REP1722J-M··· (GC)



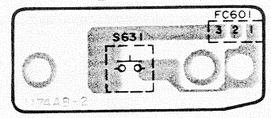
For (GC) area.



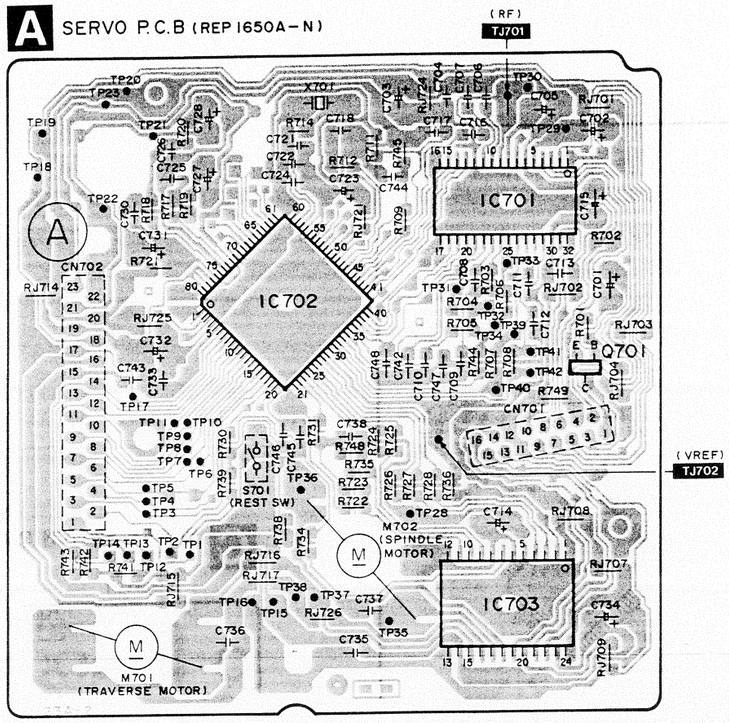
For (GN) area.



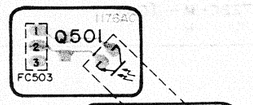
C POWER SWITCH P.C.B.
(REP1723C-S)



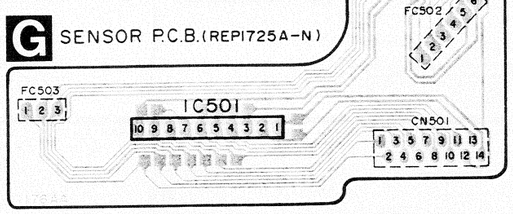
A SERVO P.C.B (REP1650A-N)



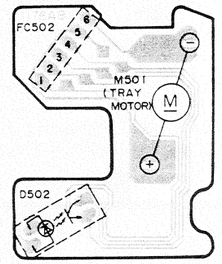
D PHOTO TRANSISTOR P.C.B.(REP1725A-N)



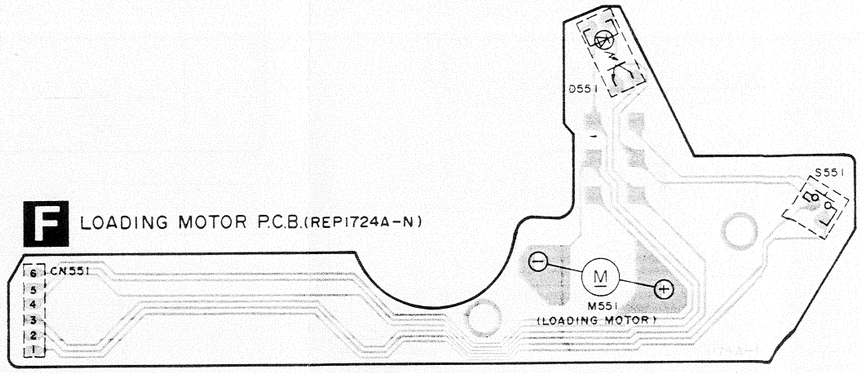
G SENSOR P.C.B.(REP1725A-N)



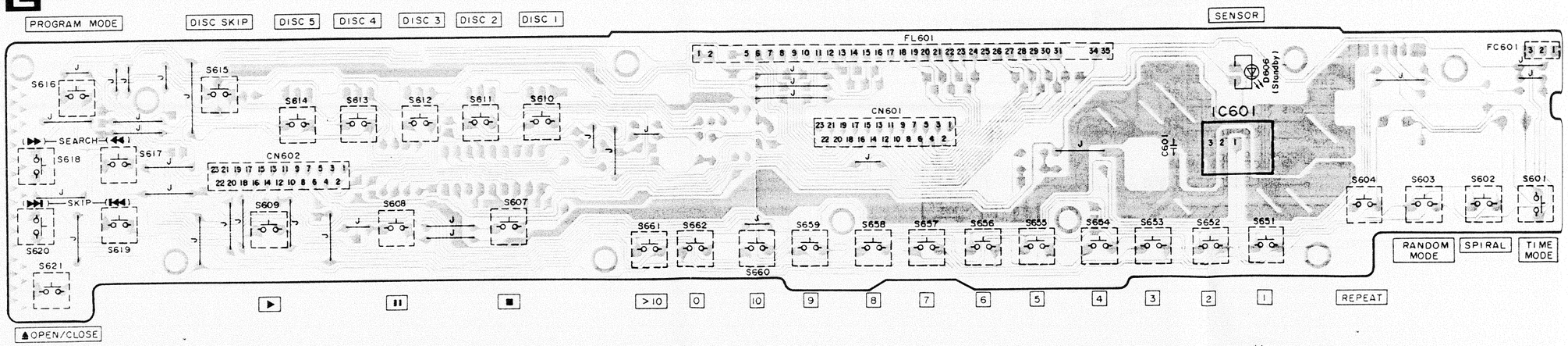
B TRAY MOTOR P.C.B. (REP1725A-N)



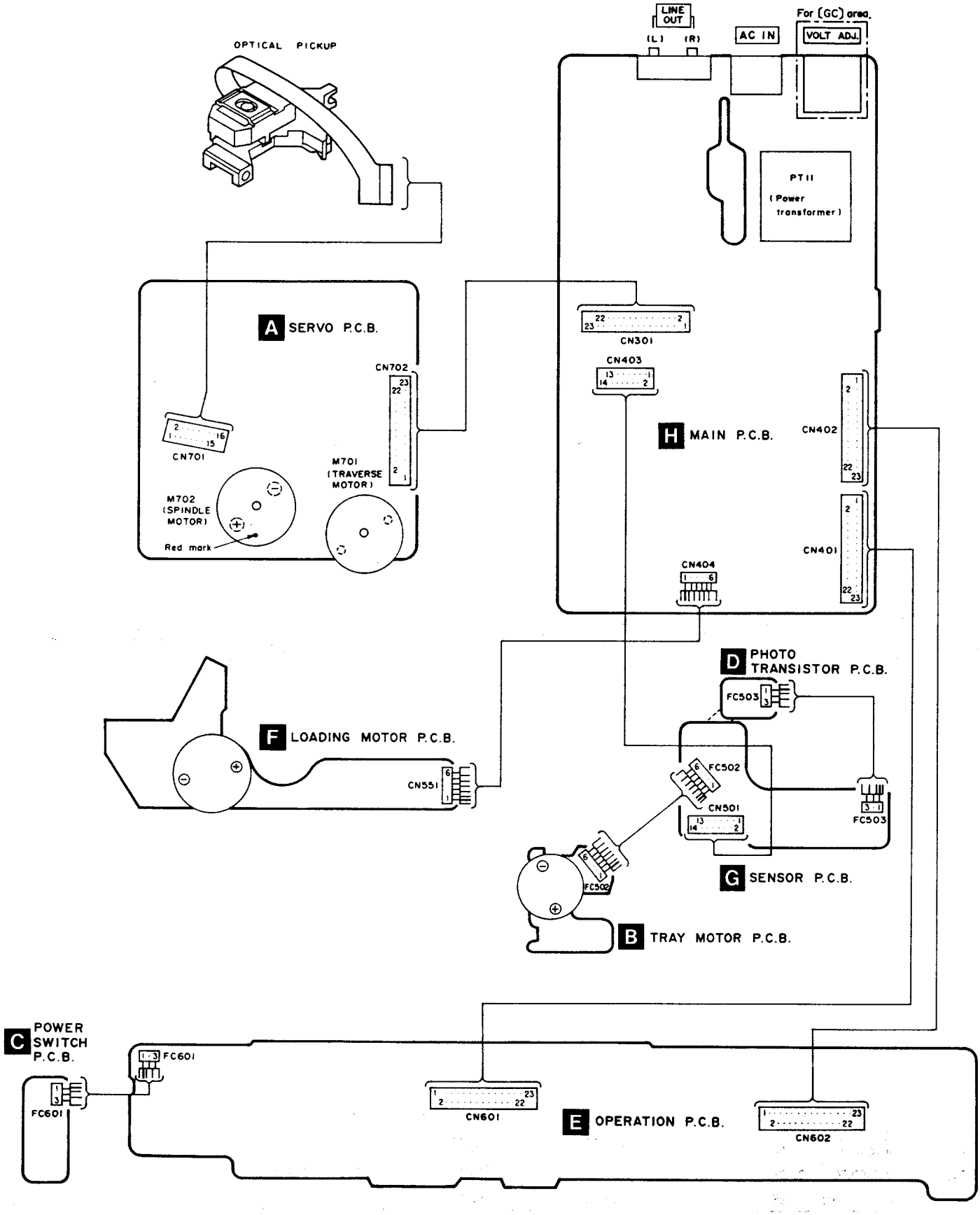
F LOADING MOTOR P.C.B.(REP1724A-N)



E OPERATION P.C.B.(REP1723C-S)



■ WIRING CONNECTION DIAGRAM



■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
*Warning: This product uses a laser diode. Refer to caution statements on page 2.
*ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.

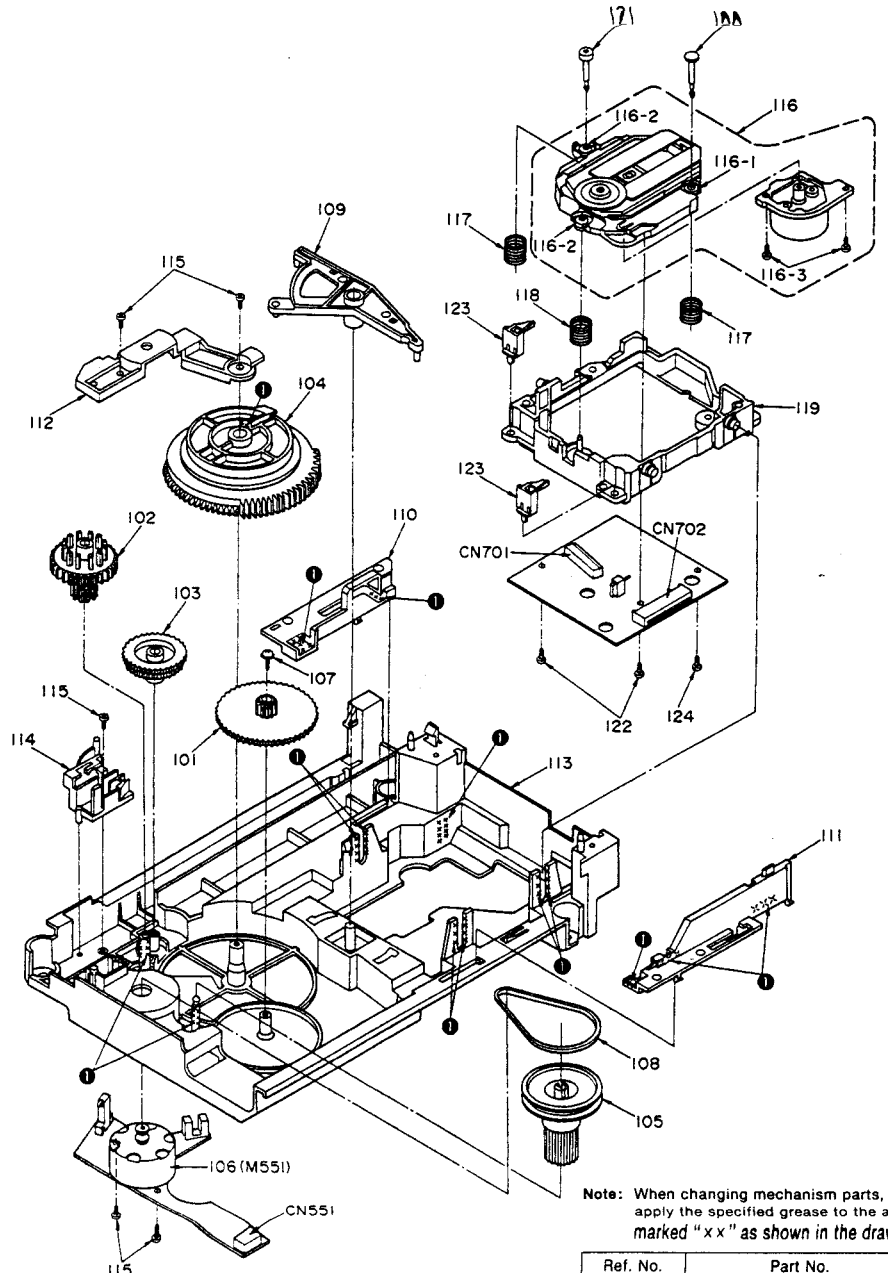
Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	LM2940T5	REGULATOR	⚠
IC401	UPD78044AG58	SYSTEM CONTROL&FL DRIVE	
IC501	BA6247N	MOTOR DRIVE	
IC601	RCDHC-278N	REMOTE CONTROL SENSOR	
IC801	BA4558FHT1	L. P. F.	
		TRANSISTOR(S)	
Q11	UN4214TA	TRANSISTOR	
Q12	UN4114TA	TRANSISTOR	
Q13	UN4114TA	TRANSISTOR	
Q15	2SD2037EFTA	TRANSISTOR	⚠
Q16	2SD2037EFTA	TRANSISTOR	(GC)⚠
Q21	2SC3311AIQST	TRANSISTOR	⚠
Q22	2SA1309AIQST	TRANSISTOR	⚠
Q31	2SB1238QSTV6	TRANSISTOR	⚠
Q32, 33	2SD1450RTA	TRANSISTOR	
Q41	2SD1862QRTV6	TRANSISTOR	⚠
Q401	2SC3311AIQST	TRANSISTOR	
Q461, 462	UN4215	TRANSISTOR	
Q471	UN4214TA	TRANSISTOR	
Q472	2SC3311AIQST	TRANSISTOR	
Q501	PT381TB	TRANSISTOR	
Q801, 802	2SD1450RTA	TRANSISTOR	
Q851	UN4112	TRANSISTOR	
Q852	UN4212TA	TRANSISTOR	
Q853	UN4112	TRANSISTOR	
		DIODE(S)	
D11-14	RL1N4003N02	DIODE	⚠
D15	MA4091-M	DIODE	⚠
D16	RL1N4003N02	DIODE	
D21, 22	RL1N4003N02	DIODE	⚠
D23, 24	MA4100MTA	DIODE	⚠
D31, 32	RL1N4003N02	DIODE	⚠
D33	MA4270	DIODE	⚠
D34	MA4091-M	DIODE	⚠
D41	MA4062MTA	DIODE	⚠
D42	RL1N4003N02	DIODE	(E, EB, EG)
D42	MA165	DIODE	(GC, GN)
D43	1SS291TA	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D44	RL1N4003N02	DIODE	(E, EB, EG)
D51, 52	MA165	DIODE	⚠
D53	MA4051MTA	DIODE	⚠
D54	MA165	DIODE	
D401-406	MA165	DIODE	
D461	MA4068MTA	DIODE	
D462	MA4056MTA	DIODE	
D501	GL380TB	L. E. D.	
D502	RSQGP1S53V	DIODE	
D551	SG-206S	DIODE	
D606	LN018304P	L. E. D.	
D801, 802	MA165	DIODE	
D852	MA165	DIODE	
		COIL(S)	
L11, 12	RLQX400MT-D	COIL	⚠
		TRANSFORMER(S)	
PT11	RTP1K4B023-X	POWER TRANSFORMER	(E, EB, EG, GN)⚠
PT11	RTP1K4E030-X	POWER TRANSFORMER	(GC)⚠
		COMPONENT COMBINATION(S)	
Z301	BL02RN2R65T2	COMBINATION PART	
		OSCILLATOR(S)	
X401	RSXY4M23M01T	OSCILLATOR(4. 2336MHz)	
		DISPLAY TUBE(S)	
FL601	RSL0170-F	DISPLAY TUBE	
		SWITCH(ES)	
S11	RSR4A003S-1H	VOLTAGE ADJ.	(GC)⚠
S551	RSH1A005	OPEN/CLOSE DETECTOR	
S601	EVQ21405R	TIME MODE	
S602	EVQ21405R	SPIRAL	
S603	EVQ21405R	RANDOM MODE	
S604	EVQ21405R	REPEAT	
S607	EVQ21405R	STOP	
S608	EVQ21405R	PAUSE	

Ref. No.	Part No.	Part Name & Description	Remarks
S609	EVQ21405R	PLAY	
S610	EVQ21405R	DISC 1	
S611	EVQ21405R	DISC 2	
S612	EVQ21405R	DISC 3	
S613	EVQ21405R	DISC 4	
S614	EVQ21405R	DISC 5	
S615	EVQ21405R	DISC SKIP	
S616	EVQ21405R	PROGRAM MODE	
S617	EVQ21405R	R. SEARCH	
S618	EVQ21405R	F. SEARCH	
S619	EVQ21405R	R. SKIP	
S620	EVQ21405R	F. SKIP	
S621	EVQ21405R	OPEN/CLOSE	
S631	EVQ21405R	POWER	
S651	EVQ21405R	PRESET TUNING 1	
S652	EVQ21405R	PRESET TUNING 2	
S653	EVQ21405R	PRESET TUNING 3	
S654	EVQ21405R	PRESET TUNING 4	
S655	EVQ21405R	PRESET TUNING 5	
S656	EVQ21405R	PRESET TUNING 6	
S657	EVQ21405R	PRESET TUNING 7	
S658	EVQ21405R	PRESET TUNING 8	
S659	EVQ21405R	PRESET TUNING 9	
S660	EVQ21405R	PRESET TUNING 10	
S661	EVQ21405R	PRESET TUNING >10	
S662	EVQ21405R	PRESET TUNING 0	
		CONNECTOR(S)	
CN11	RJS1A1101T1	CONNECTOR(1P)	
CN12, 13	RJS1A1101T1	CONNECTOR(1P)	(GC)
CN14	RJS1A1101T1	CONNECTOR(1P)	
CN16-21	RJS1A1101T1	CONNECTOR(1P)	
CN301	RJS1A6823	CONNECTOR(23P)	
CN401, 402	RJS1A6823	CONNECTOR(23P)	
CN403	RJS1A6814	CONNECTOR(14P)	
CN404	RJS1A6606	CONNECTOR(6P)	
CN501	RJS1A6714	CONNECTOR(14P)	
CN551	RJS2A1506	CONNECTOR(6P)	
CN601, 602	RJS1A6223-1	CONNECTOR(23P)	
		JACK(S)	
JK11	SJS9236	AC INLET	(E, EB, EG, GC) ⚠
JK11	SJSD16	AC INLET	(GN) ⚠
JK801	RJH3201N	LINE OUT	
		FLAT CABLE(S)	
FC502	REZ0612	FLAT CABLE(6P)	
FC503	REZ0613	FLAT CABLE(3P)	
FC601	REZ0610	FLAT CABLE(3P)	

Ref. No.	Part No.	Part Name & Description	Remarks
		<SERVO P.C.B.>	
		INTEGRATED CIRCUIT(S)	
IC701	AN8802SCE1V	SERVO AMP.	
IC702	MN66271RA	SERVO PROCESSOR	
IC703	AN8389SE1	MOTOR DRIVE	
		TRANSISTOR(S)	
Q701	2SB709S	TRANSISTOR	
		OSCILLATOR(S)	
X701	RSX216M9M01T	OSCILLATOR(16.9344MHz)	
		SWITCH(ES)	
S701	RSMD006-P	REST DETECTOR	
		CONNECTOR(S) AND SOCKET(S)	
CN701	RJU035T016-1	SOCKET(16P)	
CN702	RJS1A6723-1Q	CONNECTOR(23P)	

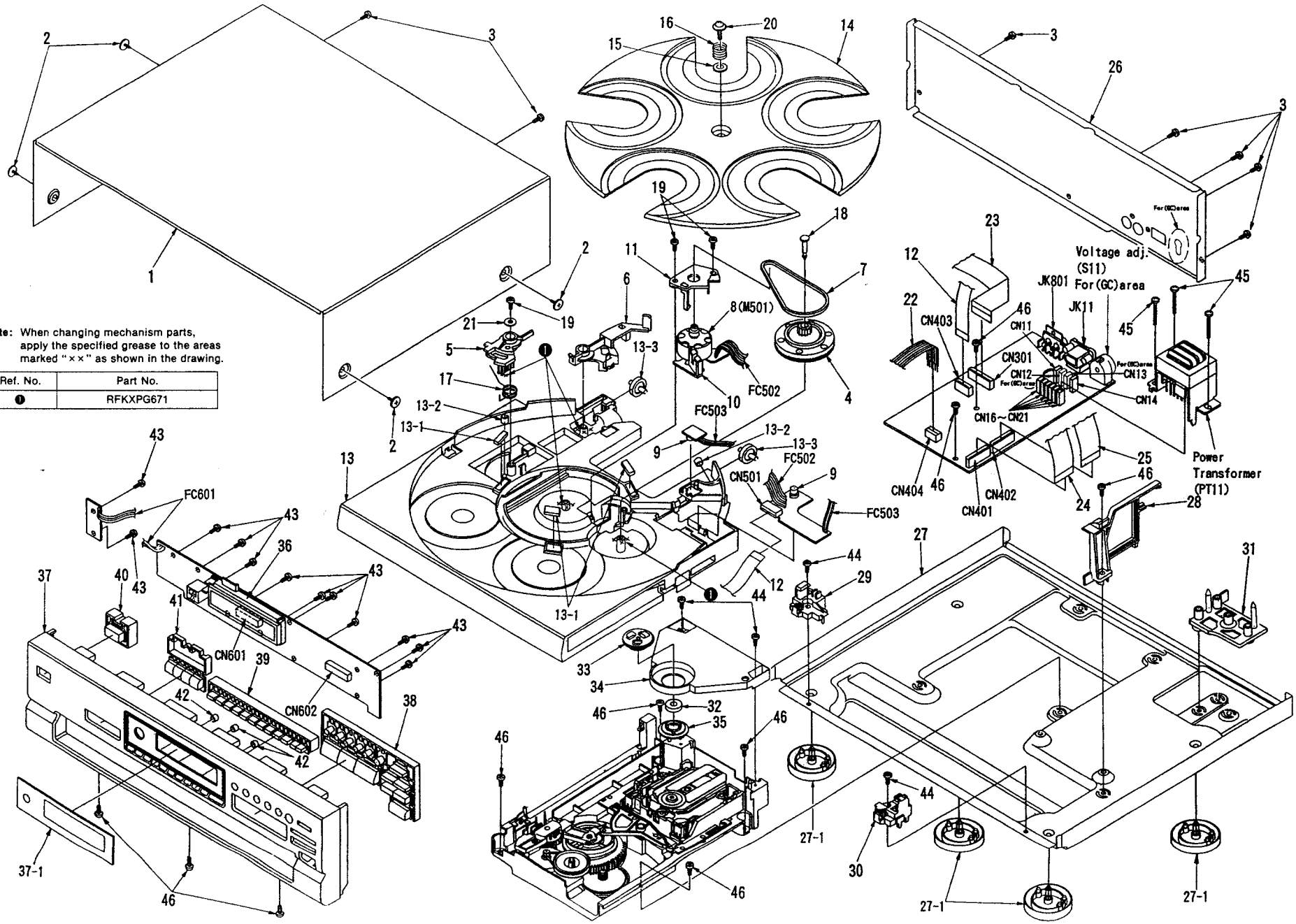
■ LOADING MECHANISM PARTS



Note: When changing mechanism parts, apply the specified grease to the areas *marked "x x" as shown in the drawing.*

Ref. No.	Part No.
❶	RFKXPG671

■ CABINET PARTS LOCATION



■REPLACEMENT PARTS LIST

Notes: *The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
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Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RGMD193-K	CABINET	
2	SNE2129-3	SCREW	
3	XTBS3+8JFZ1	SCREW	
4	RDGD267	REDUCTION GEAR	
5	RDGD268	CLOSE LOCK GEAR	
6	RDGD269-3	OPEN LOCK GEAR	
7	RDVD031	BELT	
8	RFKPLPD687PA	TRAY MOTOR(M501) ASS'Y	
9	RMND254	LED HOLDER(D501, Q501)	
10	RMND255	SENSOR HOLDER(D502)	
11	RMND263	MOTOR HOLDER	
12	REZD648	FFC(24P)	
13	RFKNLPD1000E	TRAY ASS'Y	(E, EB, EG)
13	RFKNLPD687PA	TRAY ASS'Y	(GC, GN)
13-1	RMFD182	TRAY FELT	
13-2	RMGD200	SILENT RUBBER	
13-3	RMRD546-W	TRAY ROLLER	
14	RGTD019-1	ROTARY TRAY	
15	RHW81001-1	WASHER	
16	RMBD365	SPRING	
17	RMED152-2	LOCK GEAR SPRING	
18	RMSD123-1	RIVET	
19	XTB3+10G	SCREW	
20	XTWS3+10T	SCREW	
21	XWE3D13	SCREW	
22	REZD623	FLAT CABLE(6P)	
23	REZD635	FFC(23P)	
24	REZD636	FFC(23P)	
25	REZD637	FFC(23P)	
26	RGRD184A1C1	REAR PANEL	(E, EG)
26	RGRD184A1D1	REAR PANEL	(EB, GN)
26	RGRD184B1A	REAR PANEL	(GC)
27	RFKJLPD667PK	CHASSIS ASS'Y	
27-1	RKAD053-A	FOOT	
28	RMRD749-W	CABLE HOLDER	
29	RMRD742-K	TRAY BASE GUIDE(L)	
30	RMRD743-K	TRAY BASE GUIDE(R)	
31	RMRD765-W1	TRANSFORMER BASE	
32	RHM245ZA	MAGNET	
33	RMRD334	FIXED PLATE	
34	RFKNLPD687EK	CLAMP PLATE ASS'Y	
35	RMRD761-W	CLAMPER	
36	RMND185-1	FL HOLDER	
37	RFKGLPD687EK	FRONT PANEL ASS'Y	

Ref. No.	Part No.	Part Name & Description	Remarks
37-1	RGKD611A-K	FRONT ORNAMENT PLATE	
38	RGU1016-K1	MAIN BUTTON	
39	RGU1019-K	10 KEY BUTTON	
40	RGU1015-K	POWER BUTTON	
41	RGU1017-K	SUB BUTTON	
42	RMGD200	STOPPER TUBE	
43	XTBS26+8J	SCREW	
44	XTB3+10JFZ	SCREW	
45	XTB3+20J	SCREW	
46	XTB3+8JFZ	SCREW	
		LOADING MECHANISM	
101	RDGD270	REDUCTION GEAR	
102	RDGD271	DRIVE GEAR(1)	
103	RDGD272	DRIVE GEAR(2)	
104	RDKD025	DRIVE CAM	
105	RDPD050	PULLEY GEAR	
106	RFKPLPD667PB	LOADING MOTOR(M551) ASS'Y	
107	RHD26019	SCREW	
108	RMGD268-K	BELT	
109	RMLD334	DRIVE LEVER	
110	RMMD117	SLIDE PLATE(1)	
111	RMMD118	SLIDE PLATE(2)	
112	RMRD746-W	REINFORCING PLATE	
113	RFKNLPD667PB	MECHANISM BASE ASS'Y	
114	RXQD346-1	SLIDER PLATE	
115	XTB3+10JFZ	SCREW	
116	RAED113Z	TRAVERSE DECK ASS'Y	
116-1	SHGD112	FLOATING RUBBER(1)	
116-2	SHGD113-1	FLOATING RUBBER(2)	
116-3	SNSD38	SCREW	
117	RMED109	FLOATING SPRING(1)	
118	RMED142	FLOATING SPRING(2)	
119	RMRD698-K	TRAVERSE CHASSIS	
120	RMSD123-1	TRAVERSE FIXED PIN(1)	
121	RMSD350	TRAVERSE FIXED PIN(2)	
122	XTV2+6G	SCREW	
123	RMXD094	TRAY HOLDER	
124	XTN2+6G	SCREW	

SL-PD687

RESISTORS AND CAPACITORS

Notes : · Capacity values are in microfarads (uF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F)
· Resistance values are in ohms, unless specified otherwise, 1 K = 1,000 (OHM), 1 M = 1,000 k (OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R11, 12	ERDS2TJ181T	1/4W 180 E, EB, EG, GN
R11, 12	ERDS2TJ271	1/4W 270 GC
R13-16	ERDS2TJ1R0	1/4W 1.0 GC
R17	ERQ16NKWR15E	1W 0.15 E, EB, EG⚠
R21, 22	ERDS2TJ122	1/4W 1.2K E, EB, EG, GN
R21, 22	ERDS2TJ182	1/4W 1.8K GC
R31	ERDS2TJ123	1/4W 12K
R32, 33	ERDS2TJ103	1/4W 10K
R34	ERDS2TJ101	1/4W 100 E, EB, EG
R41	ERDS2TJ221	1/4W 220 E, EB, EG
R41	ERDS2TJ471	1/4W 470 GC, GN
R42	ERDS2TJ221	1/4W 220 E, EB, EG
R43	ERDS2TJ221	1/4W 220 E, EB, EG
R44, 45	ERDS2TJ4R7T	1/4W 4.7 E, EB, EG
R51, 52	ERDS2TJ122	1/4W 1.2K
R401-407	ERDS2TJ472	1/4W 4.7K
R409	ERDS2TJ102	1/4W 1K
R410	ERDS2TJ103	1/4W 10K
R411	ERDS2TJ472	1/4W 4.7K
R412	ERDS2TJ223	1/4W 22K
R413	ERDS2TJ103	1/4W 10K
R414	ERDS2TJ471	1/4W 470
R415	ERDS2TJ103	1/4W 10K
R416	ERDS2TJ102	1/4W 1K
R421	ERDS2TJ472	1/4W 4.7K
R461	ERDS2EJ121	1/4W 120 E, EB, EG
R461	ERDS2TJ271	1/4W 270 GC, GN
R462	ERDS2TJ221	1/4W 220
R463	ERDS2EJ121	1/4W 120 E, EB, EG
R471	ERDS2TJ103	1/4W 10K
R472	ERDS2EJ121	1/4W 120
R803, 804	ERDS2TJ224T	1/4W 220K
R805, 806	ERDS2TJ822	1/4W 8.2K
R807, 808	ERDS2TJ123	1/4W 12K
R809-812	ERDS2TJ333	1/4W 33K
R813-816	ERDS2TJ102	1/4W 1K
R817, 818	ERDS2TJ473	1/4W 47K
R819, 820	ERDS2TJ100	1/4W 10
R851	ERDS2TJ222	1/4W 2.2K
R852	ERDS2TJ102	1/4W 1K
		CAPACITORS
C11	ECBT1E103ZF	25V 0.01U
C12	ECAJCM332B	16V 3300U ⚠
C15	ECBT1H102KB5	50V 1000P

Ref. No.	Part No.	Values & Remarks
C16	ECA1AM471B	10V 470U
C17	RCE0JKA101BV	6.3V 100U
C20	ECBT1E1032F	25V 0.01U E, EB, EG, GN
C20	ECBT1H102KB5	50V 1000P GC
C21, 22	ECA1VM101B	35V 100U
C25, 26	ECBT1H102KB5	50V 1000P
C30	ECBT1E1032F	25V 0.01U GC, GN
C31, 32	ECA1JM470B	63V 47U
C33	ECBT1H102KB5	50V 1000P
C34	ECBT1H102KB5	50V 1000P GC
C41	ECBT1H102KB5	50V 1000P
C42	RCE0JKA101BV	6.3V 100U
C301	ECBT1C103NS5	16V 0.01U
C401	ECBT1C103NS5	16V 0.01U
C402	ECA0JM471B	6.3V 470U
C403	ECEA1HKA010B	50V 1U
C404	ECEA1EKA4R7B	25V 4.7U
C405	ECBT1C103NS5	16V 0.01U
C406	ECEA1HKA010B	50V 1U
C421	ECBT1C103NS5	16V 0.01U
C461	RCE1AKA470BG	10V 47U
C462	ECBT1C103NS5	16V 0.01U
C601	ECFR1E104ZF5	25V 0.1U
C801, 802	RCE1AKA470BG	10V 47U
C805-808	ECCR1H391J5	50V 390P
C809, 810	RCE0JKA470BG	6.3V 47U
C811, 812	ECBT1H102KB5	50V 1000P
		<SERVO P.C.B.>
		RESISTORS
R701	ERJ6GEYJ100	1/10W 10
R702	ERJ6GEYJ471V	1/10W 470
R703	ERJ6GEYJ823	1/10W 82K
R704	ERJ6GEYJ102A	1/10W 1K
R705	ERJ6GEYJ103V	1/10W 10K
R706	ERJ6GEYJ102A	1/10W 1K
R707	ERJ6GEYJ473V	1/10W 47K
R708	ERJ6GEYJ104V	1/10W 100K
R709	ERJ6GEYJ683V	1/10W 68K
R711	ERJ6GEYJ154V	1/10W 150K
R712	ERJ6GEYJ221V	1/10W 220
R717-720	ERJ6GEYJ102A	1/10W 1K
R721	ERJ6GEYJ101V	1/10W 100
R722	ERJ6GEYJ563V	1/10W 56K
R723	ERJ6GEYJ182V	1/10W 1.8K
R724	ERJ6GEYJ333V	1/10W 33K
R725	ERJ6GEYJ472V	1/10W 4.7K
R726	ERJ6GEYJ473V	1/10W 47K

Ref. No.	Part No.	Values & Remarks
R727	ERJ6GEYJ103V	1/10W 10K
R728	ERJ6GEYJ392V	1/10W 3.9K
R730	ERJ6GEYJ331V	1/10W 330
R731	ERJ6GEYJ392V	1/10W 3.9K
R734-736	ERJ6GEYJ101V	1/10W 100
R738	ERJ6GEYJ223V	1/10W 22K
R739	ERJ6GEYJ681V	1/10W 680
R741-743	ERJ6GEYJ562V	1/10W 5.6K
R744	ERJ6GEYJ103V	1/10W 10K
R745	ERJ6GEYJ155V	1/10W 1.5M
R748	ERJ6GEYJ182V	1/10W 1.8K
R749	ERJ8GEYJ103V	1/8W 10K
		CHIP JUMPERS
R714	ERJ6GEY0R00A	CHIP JUMPER
J701-704	ERJ8GEY0R00A	CHIP JUMPER
J707-709	ERJ8GEY0R00A	CHIP JUMPER
J714-717	ERJ8GEY0R00A	CHIP JUMPER
J721	ERJ6GEY0R00A	CHIP JUMPER
J724-726	ERJ6GEY0R00A	CHIP JUMPER
		CAPACITORS
C701	ECEA0JKA220	6.3V 22U
C702	ECEA1HKA010I	50V 1U
C703	ECEA0JKA101I	6.3V 100U
C704	ECUZNE104MBN	25V 0.1U
C705	ECEA1HKA010I	50V 1U
C706	ECUE1H101JCN	50V 100P
C707	ECUV1E273KBN	25V 0.027U
C708	ECUE1H472KBN	50V 4700P
C709	ECUE1C473KBN	16V 0.047U
C710	ECUE1H152KBN	50V 1500P
C711, 712	ECUWNE104ZFN	25V 0.1U
C713	ECUV1C104MBM	16V 0.1U
C714	ECEA0JKA101I	6.3V 100U
C715	ECEA0JKA470I	6.3V 47U
C716	ECUE1H561KBN	50V 560P
C717	ECUWNE104ZFN	25V 0.1U
C718	ECUV1C224KBM	16V 0.22U
C721, 722	ECUE1H270JCN	50V 27P
C723	ECEA1AKA221I	10V 220U
C724	ECUV1C104MBM	16V 0.1U
C725, 726	ECUE1H102KBN	50V 1000P
C727, 728	ECEA1HPK010I	50V 1U
C730	ECUWNE104ZFN	25V 0.1U
C731, 732	ECEA0JK221I	6.3V 220U
C733	ECUZNE104MBN	25V 0.1U

Ref. No.	Part No.	Values & Remarks
C734	ECEA1AKA221I	10V 220U
C735-737	ECUWNE104ZFN	25V 0.1U
C738	ECUV1C154KBN	16V 0.15U
C742	ECUV1E273KBN	25V 0.027U

Ref. No.	Part No.	Values & Remarks
C743	ECUWNE104ZFN	25V 0.1U
C744	ECUE1E822KBN	25V 8200P
C745	ECUE1C473MBN	16V 0.047U
C746	ECUE1H050DCN	50V 5P

Ref. No.	Part No.	Values & Remarks
C747	ECUE1H222KBN	50V 2200P
C748	ECUV1H471KBM	50V 470P

REPLACEMENT PARTS LIST

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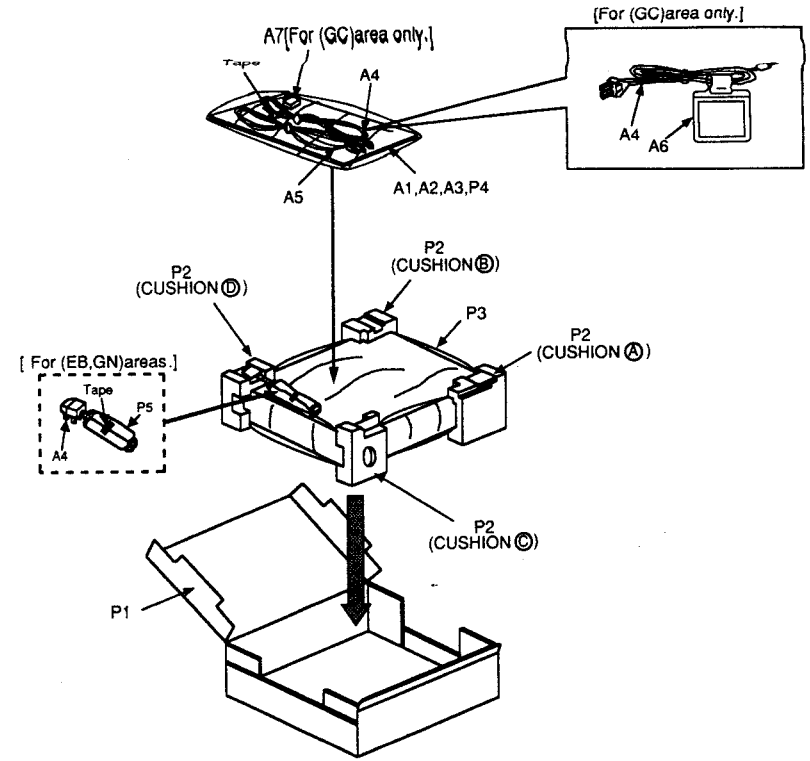
*ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.
*The "(SF)" mark denotes the standard part.
*[V] indicates in Remarks columns parts that are supplied by Video Recorder Division.

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL	
P1	RPG2327	PACKING CASE	(E, EG, GC)
P1	RPG2328	PACKING CASE	(EB)
P1	RPG2365	PACKING CASE	(GN)
P2	RPN0760	CUSHION	(E, EG, GC)
P2	RPN0772	CUSHION	(EB, GN)
P3	SPP730	PROTECTION BAG (UNIT)	
P4	RPF0139	PROTECTION BAG (F.B.)	
P5	RPH0032	MIRROR SHEET	(EB, GN)
		ACCESSORIES	
A1	RFKSLPD687E	INSTRUCTION MANUAL ASS'Y	(E)
A1	RQT2773-B	INSTRUCTION MANUAL	(EB, GN)
A1	RFKSLPD687EG	INSTRUCTION MANUAL ASS'Y	(EG)
A1	RFKSLPD687GC	INSTRUCTION MANUAL ASS'Y	(GC)
A2	RQAD013	WARRANTY CARD	(E, EB, EG)
A2	RQX7433ZA	WARRANTY CARD	(GN)
A3	RQCB0169	SERVICENTER LIST	
A4	RJA0019-2K	AC POWER SUPPLY CORD	(E, EG, GC)⚠(SF)
A4	VJA0733	AC POWER SUPPLY CORD	(EB)⚠(SF) [V]

Ref. No.	Part No.	Part Name & Description	Remarks
A4	RJA0036-K	AC POWER SUPPLY CORD	(GN)⚠(SF)
A5	SJP2249-3	STEREO CONNECTION CABLE	
A6	RQLA0134	VOLTAGE CAUTION LABEL	(GC)
A7	SJP5213-2	POWER PLUG ADAPTOR	(GC)⚠
		<GREASE OR JIG/TOOL>	
		TEST DISC	
SA1	SZZP1054C	PLAYABILITY TEST DISC	
SA2	SZZP1056C	UNEVEN TEST DISC	
		ALLEN WRENCH	
SA3	SZZP1101C	ALLEN WRENCH (M2.0)	
		LOCK PAINT	
SA4	RZZDL01	LOCK PAINT	
		GREASE	
SA5	RFKXPG671	MOLYCOAT GREASE PG671	

■PACKAGING



[CUSHION Ⓐ,Ⓑ,Ⓒ,Ⓓ : Part No.RPN0760:For (E,EG,GC) areas.
: Part No.RPN0772:For (EB,GN) areas.]

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